

EXHIBIT 1

APPENDIX A

GROUND FOR EXCLUSION OF ARM'S EXPERT OPINIONS AND CORRESPONDING PARAGRAPHS

Michael Brogioli

Grounds for Exclusion of Expert Opinions	Corresponding Paragraphs
Brogioli's report contains improper rebuttal.	Brogioli 9/5/2025 Rep. in its entirety.
Brogioli's opinions regarding what is "necessary" for verification are not reliable and do not "fit" the case.	Brogioli 9/5/2025 Rep. ¶¶ 165–265
Brogioli's opinions regarding harm are not reliable.	Brogioli 9/5/2025 Rep. ¶¶ 266–368
Brogioli's [REDACTED] opinions are not reliable.	Brogioli 9/5/2025 Rep. ¶¶ 378–94
Brogioli's Nuvia-related opinions do not "fit" the case.	Brogioli 9/5/2025 Rep. ¶¶ 369–77
Brogioli's opinions regarding [REDACTED] are unreliable.	Brogioli 9/5/2025 Rep. ¶¶ 395–419
Background: Not in support of any admissible opinion	Brogioli 9/5/2025 Rep. ¶¶ 23-164

Steven Richards

Grounds for Exclusion of Expert Opinions	Corresponding Paragraphs
Richards' Report Contains Improper Rebuttal	Richards 9/5/2025 Rep. ¶¶ 1-94
Richards' Materiality and ASC 450-20 Opinions Are Unreliable	Richards 9/5/2025 Rep. ¶¶ 21, 64-68, 92
Richards' Materiality Opinions About Qualcomm's State of Mind Are Inappropriate	Richards 9/5/2025 Rep. ¶¶ 21, 64-68, 92
Richards' Harm Opinions Do Not "Fit" the Case	Richards 9/5/2025 Rep. ¶¶ 22, 69-91, 93
Background: Not in support of any admissible opinion	Richards 9/5/2025 Rep. ¶¶ 23-63

Thomas Britven

Grounds for Exclusion of Expert Opinions	Corresponding Paragraphs
Britven's recitation of factual allegations is improper.	Britven 9/5/2025 Rep. ¶¶ 77-79, 80, 109, 147-149.
Britven's opinions about what was [REDACTED] for Arm to do not "fit" the case.	Britven 9/5/2025 Rep. ¶¶ 17, 81, 149, 151.
Britven's opinions about causation are improper.	Britven 9/5/2025 Rep. ¶¶ 18, 203, 209-15.

Timothy Simcoe

Grounds for Exclusion of Expert Opinions	Corresponding Paragraphs
Simcoe's opinions about the parties' intent or state of mind are improper.	Simcoe 9/5/2025 Rep. ¶¶ 56-62, 108, 120-26, 141, 166-71, 236-237.
Simcoe's opinions About the "Future Competitive Constraint from the RISC-V ISA" and hypothetical "Additional Diversion Paths" are speculative and not reliable.	Simcoe 9/5/2025 Rep. ¶¶ 67-74, 131-36, 145-48, 150-61, 220-26.
Simcoe's opinions about Qualcomm's total revenue and Arm's total R&D expenditure are unreliable.	Simcoe 9/5/2025 Rep. ¶¶ 82-86, 212-26.

EXHIBIT 2

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE**

QUALCOMM INC., a Delaware corporation,
and QUALCOMM TECHNOLOGIES, INC.,
a Delaware corporation,

Plaintiffs,

v.

ARM HOLDINGS PLC, f/k/a ARM LTD., a
U.K. corporation,

Defendant.

C.A. No. 24-490-MN

**HIGHLY CONFIDENTIAL -
ATTORNEY’S EYES ONLY**

REBUTTAL EXPERT REPORT OF MICHAEL C. BROGIOLI, PH.D.

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

TABLE OF CONTENTS

	<u>Page</u>
I. Introduction.....	1
II. Qualifications.....	1
III. Task and Compensation.....	5
IV. Materials Considered.....	6
V. Trial Exhibits.....	6
VI. Summary of Opinions.....	7
VII. Background	8
A. Parties.....	8
1. Arm	8
2. Qualcomm.....	8
B. Litigation.....	11
1. The <i>Arm v. Qualcomm</i> Dispute.....	11
2. The Current Dispute.....	13
C. Qualcomm’s Allegations	13
VIII. Technology Background.....	15
A. Instruction Set Architectures.....	16
1. What An ISA Is.....	16
2. Why ISAs Are Important	17
3. Arm’s Instruction Set Architecture	21
4. Non-Arm ISAs	34
B. Many Companies Design CPU Cores.....	41
C. Many Companies Sell Silicon Chips	43
IX. Relevant Agreements	44

A.	[REDACTED] In Section [REDACTED] Of The v8 Annex 1 To The ALA.....	45
1.	[REDACTED]	45
2.	[REDACTED]	50
3.	[REDACTED]	52
4.	[REDACTED]	53
B.	[REDACTED] In Section [REDACTED] Of The v9 Annex 1 To The ALA.....	53
1.	[REDACTED]	54
2.	[REDACTED]	56
3.	[REDACTED]	59
4.	[REDACTED]	60
C.	How Arm Provides The [REDACTED] In Section [REDACTED] Of The v8 And v9 Annex 1s To Partners, Including Qualcomm.....	60
X.	The CPU Core Design Verification Process	64
A.	The Architecture Compliance Kit.....	66
XI.	The Materials And Support That Qualcomm Contends Arm Withheld Were Not Necessary For Qualcomm To Complete The Verification Process	68
A.	OOB Packages	71
1.	Contents Of An OOB Package	72
2.	OOB Packages Are Support Materials And Are Not Necessary For The Architecture Verification Process.....	75
B.	ACK Patches	84
1.	ACK Patches Generally	85
2.	ACK Patches Are Support Materials And Are Not Necessary For The Architecture Verification Process.....	88
C.	ETE Checker Support	100
1.	The ETE Trace Function And The ETE Checker	101

2.	ETE Checker Support, Such As Answering Questions About The ETE Checker, Is Support And Is Not Necessary For The Architecture Verification Process	103
XII.	Qualcomm’s Claims of Harm	110
A.	Qualcomm Performed Minimal “Extra” Work Due To Arm’s Alleged Withholding Of OOB Packages, ACK Patches, And ETE Checker Support	112
1.	Qualcomm Performed Minimal “Extra” Work Due To Arm’s Alleged Withholding Of OOB Packages	114
2.	Qualcomm Performed Minimal “Extra” Work Due To Arm’s Alleged Withholding Of ACK Patches	124
3.	Qualcomm Performed Minimal “Extra” Work Due To Arm’s Alleged Withholding Of ETE Checker Support	132
B.	The Alleged [REDACTED] To Qualcomm, If Any, Was Due To Qualcomm’s Actions, Not Arm’s	136
1.	The Alleged [REDACTED] Due To Arm’s Alleged Withholding Of OOB Packages, If Any, Was Minimal	139
2.	The Alleged [REDACTED] Due To Arm’s Alleged Withholding Of ACK Patches, If Any, Was Minimal	147
3.	The Alleged [REDACTED] Due To Arm’s Alleged Withholding Of ETE Checker Support, If Any, Was Minimal	151
XIII.	The Phoenix-Based And Pegasus-Based Cores Are Nuvia-Based Cores	155
XIV.	Arm’s [REDACTED]	159
XV.	Incorrect Technical Assumptions In Mr. Posner’s Report	168
1.	The Evidence Shows That Arm’s Implementation Cores Often Outperform Qualcomm’s Custom Cores	170
2.	Many Factors Besides the RTL Affect Performance	174

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

I. INTRODUCTION

1. I have been retained as an independent consultant by the law firm of Kirkland & Ellis LLP (“Kirkland” or “Counsel”) on behalf of ARM Holdings PLC (“ARM”), Defendant in the above-captioned litigation (“Litigation” or “Present Matter”). I submit this report in response to the expert reports authored by Eric Posner and Patrick Kennedy, which Qualcomm served in this case on August 8, 2025. I reserve the right to supplement or amend this Report as needed.

2. My opinions and the bases for my opinions are provided in this Report. If I am called as a witness in the Litigation, I expect that I will testify at trial regarding the matters expressed in this Report and any supplemental reports or declarations that I may prepare in connection with this investigation. I expect that I may also testify as to additional matters, including, for example, matters addressed by Qualcomm’s experts or by the parties’ counsel.

II. QUALIFICATIONS

3. I am currently an Adjunct Professor of Electrical and Computer engineering at Rice University in Houston, Texas, and Managing Director of Polymathic Consulting in Austin, Texas. I received my Bachelor of Electrical Engineering in 1999 from Rensselaer Polytechnic Institute. I received my Master of Science in Electrical and Computer Engineering in 2003 from Rice University. I received my Doctorate of Electrical and Computer Engineering in 2007 from Rice University. Much of the work in my Master of Science and Doctorate involved large scale simulation and modeling of CPU instruction sets, their applicability to various computing workloads, and the design of custom instructions within various ISAs as they targeted new application workloads. Some of this work also entailed reconfigurable computing, wherein the ISA that was supported by a CPU could change dynamically over time in relation to the application running on the silicon. My research during the 2003-2007 time frame also involved CPU simulation and design, and the verification that CPU instruction sets and models were compliant

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

with physical silicon or existing CPU instruction set simulation models, produced bit-true cycle accurate results with reference designs or ISA specifications, and were able to run compiled applications using off-the-shelf build tools targeted to an existing publicly available ISA.

4. I am a named inventor on multiple U.S. patents as well as various pending applications. I have also been a member of the RISC-V technical committee since 2018.

5. I have held the position of Adjunct Professor at Rice University since 2009, and the position of Managing Director at Polymathic Consulting since 2011. At Rice University, I instruct graduate level curricula in the areas of embedded and low-power computing, hardware and software systems and real time computing. I also advise on university research and various design initiatives, including those in low power computing, including various CPU architectures and ISAs, and their application in various areas of computing. At various points this curriculum has involved analysis of Arm architecture devices, and employees of Arm giving presentations to students relating to the Arm ISA, ecosystem and developer tools. At Polymathic Consulting, I work with a range of technologists from early stage start-ups to Fortune 500 companies on similar technologies including, but not limited to, intellectual property. From November 2009 to October 2011, I was Chief Architect, Senior Member Technical Staff at Freescale Semiconductor in Austin, TX (formerly Motorola), responsible for management of technology, engineering roadmaps, design lead on software infrastructure and next generation microprocessor architectures for embedded computing. This work included ISA design for our custom proprietary CPU architectures, as well as development tools targeting Arm devices that it sold and supported. These included digital signal processing systems, heterogeneous system on chip architectures, and low power devices. From 2008 to 2009, I was Senior Engineer working in high performance compiler

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

design and next generation microprocessor and next generation microprocessor architecture at Freescale Semiconductor in Austin, TX.

6. From June 2006 to August 2007, I worked as the Technical Co-Founder of Method Seven LLC, in Boston, MA, working with high performance software and hardware systems architecture. I am currently a co-founder, co-inventor, and Chief Technology Officer of Network Native, an Internet of Things technology company.

7. I have previously worked for Texas Instruments’ Advanced Architecture and Chip Technology division in Houston, Texas in the areas of high performance mobile and low-power embedded systems design, at the hardware and systems software level specifically around heterogeneous computing, and high speed bus and interconnect technologies. I also have worked at Intel Corporation’s Microprocessor Research Labs in the areas of computer architecture and compiler technologies.

8. In the late 1990s, I was a hardware and software developer at Vicarious Visions in New York, developing third-party titles for Nintendo’s handheld consoles, in addition to various peripheral technologies. This role specifically focused around battery operated, portable, low power computing hardware and software systems. During my career, I have served as Chief Technology Officer, often in co-founding roles.

9. While at Rice University, I developed various computer architecture designs for embedded systems and microcontroller based SoC architectures and peripherals. For example, from 2002 to 2004, I developed Spinach, a simulator design toolset for modeling programmable network interface architectures, which models system components common to all programmable computing environments as well as components specific to embedded. From 2004 to 2009, I developed Spinach DSP-FPGA, a modular and composable simulator design infrastructure for

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

programmable and reconfigurable embedded SOC architectures specifically targeting mobile, low power, and embedded and portable computing devices. From 2005 to 2009, I developed and published a retargetable compiler infrastructure and hardware design space exploration toolkit for systems related to mobile and embedded computing technologies. Many of these tools have been used at U.S. universities in the area of electrical and computer engineering research. From 1999 – 2003, I worked in the area of low power dynamic computing, specifically focusing on dynamic power management of hardware components within various low power computer architectures.

10. I have been recognized in various ways for my achievements and experience as an expert in the field of computer architecture, computer hardware and computer software systems as they relate to the subject matter at hand. I am a member of the Institute of Electrical and Electronics Engineers (IEEE). I am currently on the Steering Committee of Design Automation Conference in the areas of Embedded and Wireless Solutions. I have formerly held the position of Chair within this group. I have been a Program Committee member for the IEEE and ACM Design Automation Conference from 2011 to the present.

11. Over the past 20+ years, I have authored approximately 30 peer-reviewed academic publications, as well as engineering books in the area of computer hardware and software design. Many of these publications involved aspects of CPU instruction sets, how they can be tailored and optimized, and how they related to alternatives such as hardware acceleration vs compiled languages executing on a given CPU core. A number of these references also discuss how to extract performance from various CPU ISAs when programming CPUs with lower level programming languages, and how to leverage developer tools, software optimization, and the CPU design itself to obtain the best performance for a given set of applications. These publications are disclosed in my attached curriculum vitae.

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

12. I have previously served as an engineering consultant and testifying witness on matters related to, and including, microcontrollers and related peripherals and interconnects and components common to the technology at hand.

13. During my time in industry and as a consultant, I have worked extensively on, and submitted opinions on, issues relating to the development and deployment of embedded computing and low power and system management technologies.

14. I have attached my curriculum vitae as Exhibit 1 to this Report. It includes the above-listed credentials and additional information on my background and experience, as well as list of cases in which I have served as an expert witness within the past four years.

III. TASK AND COMPENSATION

15. I understand that Qualcomm alleges Arm breached [REDACTED] of the Arm-Qualcomm Architecture License Agreement (ALA), which [REDACTED]
[REDACTED] SAC ¶¶ 13, 78–80, 173–180. I further understand that Qualcomm’s experts, Mr. Posner and Dr. Kennedy, have offered opinions regarding the allegedly withheld verification materials and support that are the alleged cause of the breach. *See, e.g.*, Posner Rpt. ¶ 65; Kennedy Rpt. ¶ 32. I have been asked by Arm’s counsel to provide a technical assessment of these verification materials and support to assist the factfinder in understanding these materials and support that Arm provided to Qualcomm and their purpose, and to respond to Mr. Posner and Mr. Kennedy’s opinions relating to the same.

16. I am being compensated in the above task at my normal and customary rate of \$750 per hour for my time working and testifying in this litigation. I am also being reimbursed for reasonable and customary expenses associated with my work and testimony in this case.

17. My opinions are objective and my compensation is not contingent on the outcome of this litigation or the specifics of my testimony in any way.

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

IV. MATERIALS CONSIDERED

18. In forming my opinions, I have considered and may rely upon all documents and information identified in this Report, as well as the documents and information listed in Exhibit 2. I have also used my education and my many years of experience in the field of computer architecture, CPU and System-on-Chip design, CPU ISAs and CPU optimization as well as architecture modeling and verification in forming my opinions expressed in this Report.

19. I may also consider additional documents and information in forming any necessary opinions, including documents or information that may have not yet been produced in this action or were produced too late to be fully considered before my Report was due.

20. My analysis of the materials produced in this case is ongoing and I will continue to review any new material as it is provided. This Report represents only those opinions I have formed to date. I reserve the right to revise, supplement, and/or amend my opinions stated herein based on new information and on my continuing analysis of the materials already provided.

21. My opinions that follow are objective, independent, and based on information currently available to me at the time of completion of this Report. If it may be necessary for me to supplement this Report based on material or information that subsequently comes to light in this case, I reserve the right to do so. If it may be necessary for me to revise or supplement this Report, or submit a supplemental or responsive report, based upon any evidence Qualcomm may present, on any supplemental or responsive report of Qualcomm, or in light of any relevant orders from the Court or other authoritative body, I reserve the right to do so.

V. TRIAL EXHIBITS

22. At trial, I may rely on visual aids and demonstratives that illustrate the bases for my opinions and assist in explaining the technical subject matter about which I anticipate testifying. I may use documents referred to in my Report as demonstratives; for example, to

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

highlight or call out particular sections of documents, or may create my own demonstratives for use with my testimony. I may create, for example, slides, illustrations, charts, figures, slides, and the like, or other information that may be helpful in explaining my opinions to the jury. I may also use, as demonstrative exhibits, compilations of documents referred to in my Report or listed in my list of materials considered, as well as any exhibits to my Report.

VI. SUMMARY OF OPINIONS

23. As explained in this Report, it is my opinion that:
- (i) The materials and support that Qualcomm contends Arm withheld were not necessary for Qualcomm to complete the architecture compliance verification process;
 - (ii) Qualcomm alleged “extra” work due to Arm’s alleged withholding of support materials was minimal and of a type that is a standard part of the verification process;
 - (iii) The [REDACTED] that Qualcomm contends it was subject to was due to Qualcomm’s actions, not Arm’s actions;
 - (iv) The Phoenix-based and Pegasus-based cores incorporate code developed by Nuvia for its own purposes prior to the Qualcomm acquisition, consistent with industry practice regarding repurposing code;
 - (v) The features proposed for [REDACTED] [REDACTED] that provide technical solutions for Arm’s customers;
 - (vi) Mr. Posner and Dr. Kennedy rely on flawed technical assumptions.

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

VII. BACKGROUND

A. Parties

1. Arm

24. Defendant Arm, headquartered in Cambridge, UK, was founded in 1990 and is a global leader in technology regarding central processing units (“CPUs”).¹ Arm develops computer architectures, and is the industry leader in the design of CPUs for semiconductors that implement those architectures.² Arm architects, develops, and licenses its high-performance, low-cost, and energy-efficient CPU technology to other companies, primarily by licensing Arm-designed CPU core implementations under what are known as TLAs, while also licensing the architecture itself so that certain companies can design their own custom CPU cores.³ Arm’s architecture and CPU core implementations are used around the world to power datacenters, mobile devices, cars, the Internet of Things (IoT), and many other consumer and commercial applications.⁴

2. Qualcomm

25. Plaintiff Qualcomm, headquartered in San Diego, California, is a global technology company that offers semiconductor products for a variety of applications, including mobile, auto,

¹ Arm Holdings plc Annual Report and Consolidated Financial Statements for the year ended 31 March 2024, at 87, available at <https://investors.arm.com/static-files/5e34983c-cbb5-461c-b6ca-5749f6d7efd9>; *see also* <https://newsroom.arm.com/blog/arm-official-history>.

² Arm Holdings plc Annual Report and Consolidated Financial Statements for the year ended 31 March 2024, at 1, available at <https://investors.arm.com/static-files/5e34983c-cbb5-461c-b6ca-5749f6d7efd9>; *see also* <https://www.arm.com/company>.

³ *Id.*

⁴ *Id.*

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

and datacenter, among others.⁵ Qualcomm was founded in 1985 and originally focused on satellite-based communication systems for long-haul trucking, with a product called Omnitrac.⁶

26. Qualcomm’s business has changed and expanded repeatedly since its founding. In the late 1980s and through the 1990s, Qualcomm’s business changed to developing Code Division Multiple Access (CDMA) for cellular phones.⁷ In 2000, Qualcomm changed its business again. In February 2000, Qualcomm sold its CDMA consumer phone business to a Japanese company called Kyocera.⁸ In March 2000, Qualcomm announced that it was focusing on building “location-enabled mobile devices, including smart phones, PDAs and pagers,” by acquiring a company called SnapTrak that was developing so-called Assisted GPS systems for mobile phones.⁹ In the mid-to-late 2000s, Qualcomm introduced the Snapdragon chipset and began providing chipsets for mobile devices.¹⁰ In 2011, Qualcomm shifted its business again by releasing a platform for Internet of Things technologies.¹¹ In the 2010s, Qualcomm began attempting to develop its own custom CPUs intended for data centers.¹² However, it was reported that Qualcomm’s data center efforts were unsuccessful and Qualcomm cut these efforts short based on cost and legal

⁵ <https://www.qualcomm.com/company>

⁶ [https://www.qualcomm.com/news/releases/1996/08/national-freight-selects-qualcomms-omnitrac-system-enhance-service-long#:~:text=Headquartered%20in%20San%20Diego%2C%20Qualcomm,\(LEO\)%20satellite%20communications%20system;https://semiwiki.com/general/7353-a-detailed-history-of-qualcomm/](https://www.qualcomm.com/news/releases/1996/08/national-freight-selects-qualcomms-omnitrac-system-enhance-service-long#:~:text=Headquartered%20in%20San%20Diego%2C%20Qualcomm,(LEO)%20satellite%20communications%20system;https://semiwiki.com/general/7353-a-detailed-history-of-qualcomm/)

⁷ <https://semiwiki.com/general/7353-a-detailed-history-of-qualcomm/>

⁸ <https://www.qualcomm.com/news/releases/2000/02/qualcomm-and-kyocera-close-agreement-terrestrial-cdma-phone-business>

⁹ <https://www.qualcomm.com/news/releases/2000/03/qualcomm-completes-acquisition-wireless-location-leader-snaptrak>.

¹⁰ <https://www.qualcomm.com/research/cellphone-unseen-connections>

¹¹ *Id.*

¹² <https://datacentremagazine.com/technology-and-ai/qualcomms-return-to-the-data-centre-market-explained>

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

challenges.¹³ In the 2020s, Qualcomm again shifted its business beyond the Internet of Things by developing chipsets for personal computers and automobiles.¹⁴ In 2021, Qualcomm shifted its business back to the data center space by acquiring Nuvia, a start-up company that was developing custom CPU cores for data centers under an Architecture License Agreement (ALA) with Arm.¹⁵ Despite acquiring Nuvia, Qualcomm then again cut its efforts to develop custom data center CPUs in late 2022.¹⁶ Qualcomm then [REDACTED]

[REDACTED].¹⁷ Recently, Qualcomm’s CEO, Cristiano Amon testified that [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]¹⁸ Qualcomm is also [REDACTED]

[REDACTED].¹⁹

27. Presently, Qualcomm licenses Arm’s architecture and CPU technology through both an Architecture License Agreement (ALA), under which Qualcomm can develop its own

¹³ *Id.*

¹⁴ <https://www.qualcomm.com/news/onq/2025/03/qualcomm-celebrates-40-years-as-an-american-innovator#:~:text=Leveraging%20a%20legacy%20of%20breakthroughs,of%20industrial%20and%20embedded%20IoT.>

¹⁵ <https://www.qualcomm.com/news/releases/2021/03/qualcomm-completes-acquisition-nuvia>

¹⁶ See QCARM_2403478 (IM chain involving Qualcomm engineers mentioning that “Orion” (Nuvia’s data-center custom core design) “and its follow-on is canceled,” discussing whether Qualcomm could have “made this decision [a] few months back and fund ... resources redirected towards Chiplet based on design and still be in Datacenter market?” and Qualcomm’s decision “for various reasons to not pursue this option”); Trivedi Dep. Tr. at 36:13–24 [REDACTED])

¹⁷ See G. Williams Dep. Tr. at 18:15–19:5, 96:21–97:25.

¹⁸ Amon Dep. Tr. at 69:7–71:6.

¹⁹ Amon Dep. Tr. at 231:23–232:8

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

custom CPU cores that are compliant with Arm’s architecture, and a Technology License Agreement (TLA), under which Qualcomm licenses CPU cores that Arm designs.²⁰

B. Litigation

28. I understand that Arm and Qualcomm have been involved in ongoing litigation since August 2022.²¹ I understand that the dispute began approximately around the time that Qualcomm acquired Nuvia, Inc., which, as described above, was a start-up CPU company that was designing a custom CPU core under an ALA between Arm and Nuvia.²²

1. The *Arm v. Qualcomm* Dispute

29. I understand that Arm sued Qualcomm on August 31, 2022 (*Arm v. Qualcomm*, Case No. 1:22-cv-01146-MN (D. Del.)), asserting claims for specific performance and trademark infringement against Qualcomm.²³ I understand that one issue in the *Arm v. Qualcomm* litigation was Qualcomm’s use of code from Nuvia’s custom CPU core designs that were developed at Nuvia under the Arm-Nuvia ALA prior to Nuvia’s acquisition by Qualcomm.²⁴ I understand that Arm’s position in that case is that Qualcomm could not use code for custom cores that was developed

²⁰ ARM_00055357 (2013 Arm-QC ALA); ARM_0103918 (2013 Arm-QC TLA).

²¹ Arm Holdings plc Annual Report and Consolidated Financial Statements for the year ended 31 March 2024, at 5, available at <https://investors.arm.com/static-files/5e34983c-cbb5-461c-b6ca-5749f6d7efd9>; *see also* <https://www.arm.com/company>.

²² *Id.*

²³ *Id.*; *see also Arm Ltd. v. Qualcomm Inc. et al.*, Case No. 1:22-cv-01146-MN (D. Del.), Dkt. 1 (Complaint) at 16–26.

²⁴ *Id.*

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

under the Nuvia ALA unless Arm consented.²⁵ I understand that Qualcomm’s position in that case is that the Arm-Qualcomm ALA allowed Qualcomm to do so.²⁶

30. I understand that Arm sent a letter to Qualcomm on October 22, 2024 notifying Qualcomm that, among other things, Qualcomm was in material breach of the Arm-Qualcomm ALA based on Qualcomm’s use of Nuvia’s designs, and that Qualcomm’s material breach entitled Arm to terminate the ALA if Qualcomm did not cure the breach within 60 days.²⁷

31. I understand that a trial was held and a jury verdict was reached on December 20, 2024, but that jury verdict was incomplete.²⁸ Specifically, I understand that the jury concluded that Qualcomm had not breached the Arm-Nuvia ALA and that Qualcomm’s custom CPU designs that were based on the Nuvia custom CPU designs were licensed under the Qualcomm ALA.²⁹ However, I understand that the jury did not reach a conclusion on whether Nuvia had breached the Arm-Nuvia ALA.³⁰ I understand that the parties have submitted post-trial briefing in that case, and that Arm seeks a retrial of, or judgement in its favor on, all claims in that case.³¹

32. I further understand that, on January 8, 2025, Arm wrote to Qualcomm and [REDACTED]

[REDACTED]

[REDACTED]

²⁵ *Id.*

²⁶ *Arm Ltd. v. Qualcomm Inc. et al.*, Case No. 1:22-cv-01146-MN (D. Del.), Dkt. 15 (Public version of Qualcomm’s Answer) ¶¶ 3, 43.

²⁷ Arm’s 1st Supp. Resps. to Qualcomm’s 1st Set of Interrogs. (Nos. 1–3) (July 11, 2025) at 19–20 (Interrog No. 2).

²⁸ *Id.* at 20.

²⁹ Verdict Form (Case No. 1:22-cv-01146-MN), December 20, 2024.

³⁰ *Id.*

³¹ Arm’s 1st Supp. Resps. to Qualcomm’s 1st Set of Interrogs. (Nos. 1–3) (July 11, 2025) at 9–10 (Interrog No. 1).

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

██████████ QCVARM_0847182. I understand that Arm then resumed providing support for the Nuvia-based cores. *See, e.g.*, Grisenthwaite Dep. Tr. at 155:2–7; Weidmann Dep. Tr. at 125:6–126:8.

2. The Current Dispute

33. I understand that this case, *Qualcomm v. Arm*, Case No. 1:24-cv-00490-MN (D. Del.), concerns claims that Qualcomm has brought against Arm for breach of contract, tortious interference, and unfair competition.³² I understand that the operative complaint is Qualcomm’s Second Amended Complaint (“SAC”), which Qualcomm filed on June 3, 2025.³³

C. Qualcomm’s Allegations

34. I understand that Qualcomm raises eight counts against Arm in this case.³⁴

35. I understand that Qualcomm’s first count claims that Qualcomm is entitled to declaratory judgment that, among other things, Arm breached the Arm-Qualcomm ALA, Qualcomm is entitled to ██████████ under the Arm-Qualcomm ALA and TLA, Arm breached the Qualcomm TLA, Qualcomm is entitled to ██████████ ██████████ made pursuant to the TLA, Qualcomm has not breached the Arm-Qualcomm ALA, and Arm is not entitled to terminate the Arm-Qualcomm ALA.³⁵

³² *See generally Qualcomm Inc. et al. v. Arm Holdings Plc., f/k/a Arm Ltd.*, Case No. 1:24-cv-490-MN (D. Del.), Dkt. 137 (Qualcomm’s Second Amended Complaint).

³³ *Id.*

³⁴ *Id.*

³⁵ *Id.* at 52–53 (Count I).

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

36. I understand that Qualcomm’s second count claims that Arm breached [REDACTED] of the Arm-Qualcomm ALA by allegedly [REDACTED] [REDACTED] of the ALA.³⁶

37. I understand that Qualcomm’s third count claims that Arm breached the implied covenant of good faith and fair dealing in the Arm-Qualcomm ALA and TLA by, among other things, allegedly withholding materials that Qualcomm contends are deliverables, allegedly asserting that Qualcomm breached the Arm-Qualcomm ALA, allegedly disclosing the October 22, 2024 letter to the media, allegedly failing to negotiate an extension of the Arm-Qualcomm ALA, and allegedly failing to provide licensing proposals for certain Arm implementation cores.³⁷

38. I understand that Qualcomm’s fourth count claims that Arm intentionally interfered with Qualcomm’s prospective economic advantage by, among other things, allegedly disclosing the October 22, 2024 letter to the media.³⁸

39. I understand that Qualcomm’s fifth count claims that Arm negligently interfered with Qualcomm’s prospective economic advantage by, among other things, allegedly disclosing the October 22, 2024 letter to the media.³⁹

40. I understand that Qualcomm’s sixth count claims that Arm violated the California Unfair Competition Law (the “UCL”) by, among other things, engaging in conduct that Qualcomm

³⁶ *Id.* at 54–55 (Count II).

³⁷ *Id.* at 55–56 (Count III).

³⁸ *Id.* at 56–58 (Count IV).

³⁹ *Id.* at 58–59 (Count V).

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

contends constitutes unfair competition, including the alleged withholding of materials that Qualcomm contends are deliverables and the alleged refusal to negotiate license terms.⁴⁰

41. I understand that Qualcomm’s seventh count claims that Arm breached [REDACTED] of the Arm-Qualcomm TLA by, among other things, [REDACTED]
[REDACTED]
[REDACTED]⁴¹

42. I understand that Qualcomm’s eighth count claims that Arm breached [REDACTED] of the Arm-Qualcomm TLA by, among other things, [REDACTED]
[REDACTED]
[REDACTED]⁴²

43. I understand that Arm denies each and every count in Qualcomm’s Second Amended Complaint and has asserted several affirmative defenses.⁴³

VIII. TECHNOLOGY BACKGROUND

44. In this section, I provide a high-level overview of what comprises an Instruction Set Architecture (ISA) as well as why the ISA is important for microprocessor designs. I also discuss various ISAs that are commercially available in the market, and relevant aspects of those ISAs.

⁴⁰ *Id.* at 59–62 (Count VI).

⁴¹ *Id.* at 62–63 (Count VII).

⁴² *Id.* at 63–64 (Count VIII).

⁴³ *See generally Qualcomm Inc. et al. v. Arm Holdings Plc., f/k/a Arm Ltd.*, Case No. 1:24-cv-490-MN (D. Del.), Dkt. 234 (Arm’s Answer to Qualcomm’s Second Amended Complaint).

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

A. Instruction Set Architectures

1. What An ISA Is

45. In CPU design, an Instruction Set Architecture (ISA) is the formal specification of an interface that exists between software that runs on the computer, and the underlying hardware in the computing system. Generally speaking, the ISA defines the set of machine (or CPU) level instructions that are available for a CPU to execute. The ISA also defines, importantly, the format of those instructions. In relation to the instructions, the ISA will also define the registers that are available within the CPU, which are temporary storage locations that the instructions within the ISA may use to perform. The various types of memory addressing modes that the CPU can perform will also be embodied within the ISA. Examples of memory addressing modes are the ability for the CPU to either access local register or the memory system, either via simple LOAD operations, or perhaps more complex LOAD/STORE operations that use various types of offsets, and combinations of registers within the CPU in conjunction immediate values. Lastly, the ISA will also specify aspects of the overall system behavior in response to Interrupts and Exceptions that may occur in the system. Examples of Interrupts are things like the pressing of a button on a keyboard, that may cause the CPU to take action in response to this external asynchronous event. Examples of Exceptions are events that occur internal to the CPU itself, such as a division operation being performed creating a “divide by zero” operation, or an invalid instruction execution.

46. The ISA serves as the interface between the CPU’s hardware implementation and the software environment. This is important to note, as it is becoming increasingly rare that software developers write software in bare metal Assembly, i.e., using the direct native instructions, that execute on the bare metal of the microprocessor itself. Rather, modern software development and computing systems often employ Operating Systems (to operate the underlying

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

hardware and run applications), and possibly Hypervisors (to perform virtualization). In addition, modern high level programming languages such as C and C++ (to name a short few) rely on Compilers, Assemblers, Linkers and various other tools to create software executables and applications from these languages. Each and every one of these technologies are dependent on the ISA. As such, CPU ISA design factors heavily into how well these system and tools can perform, and their ability to take advantage of the features and functions of the CPU itself. At the same time, while the ISA defines this interface between the hardware and software, there is often a desirability to maintain compatibility across different implementations of the ISA for a given family of CPUs, even as the ISA evolves over time.

2. Why ISAs Are Important

47. One very important, and often critical aspect of the ISA, is the instruction set. The instruction set comprises the instructions that software and programmers can employ to execute functions on the CPU itself and is an embodiment of the set of operations the underlying CPU hardware is capable of directly performing. These operations are typically comprised of Arithmetic Operations (such as Add or Subtract), Logic Operations (such as logical AND and OR operations), Memory Access Operations (such as Loading and Storing to memory), Control Flow Operations (such as Branching execution from one program location to another), and System Level Operations (such as those related to Task Switching and Interrupt Handling), among others.

48. In addition to the types of instructions described above, the ISA will also define the register model of the microprocessor. This comprises the number of registers within the CPU, the size of the registers (8/16/20/32/40/64-bit) and the purpose of those registers (which generally are small, high-speed memory units that temporarily hold information such as data and addresses). The ISA will also mandate certain aspects of the memory, such as the memory model that is used by the CPU which may include the endianness (order of bytes) and also how data is aligned within

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

the memory. Addressing modes are also part of the ISA. These addressing modes will determine how operands used by the instructions of the ISA are located. Examples of this may be operands being directly in registers, such as an ADD operation using two inputs stored in two registers, or indirectly through memory addresses, such as a LOAD instruction that loads a value from memory through an address stored in a register. The addressing mode will also detail how immediate values are handled, as well as various modes of indirect addressing.

49. The above aspects of the ISA, such as instructions, register model, and memory model form the expressiveness of the ISA. That is to say, a large and robust ISA provides a broader and oftentimes more functional ISA that benefits programmers, systems software, and development tools such as optimizing compilers for high level programming languages, optimizing assemblers, linkers and the like.

50. Moving beyond just the instructions that comprise a given ISA, such ISAs will also define things such as privilege levels, exception handling, aspects of interrupts, and memory management mechanisms which are required for modern computing devices (note, some of these may vary for use in very low-end embedded systems). Modern ISAs also oftentimes have extensions added to them for specialized workloads. Examples of this may be vector or SIMD operations, such as Arm’s NEON ISA extensions, or Intel’s AVX extensions. These extensions are tailored to applications such as multimedia and scientific computing, other extensions may be tailored to functionality such as security and the like. These types of extensions, too, provide a consistent programming model, but can allow hardware vendors a way to distinguish and innovate in their CPU designs.

51. As one can imagine, as ISAs have evolved over the decades, different philosophies have developed in terms of overall ISA design. Two prominent design philosophies that have

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

emerged over the years are Complex Instruction Set Computing (CISC), and Reduced Instruction Set Computing (RISC). CISC ISAs have historically been characterized by offering a large and diverse set of instructions, most of those instructions often being capable of performing complex operations within a single atomic instruction within the ISA. Examples of CISC ISAs over the years include Intel’s x86 architecture, Motorola’s 68000 architecture, and Digital Equipment Corporation’s VAX architecture. RISC architectures, in contrast, favor a smaller, more uniform set of instructions that oftentimes can be executed in a single, or very few clock cycles. Examples of RISC instruction sets are those from Arm, MIPS, and more recently the RISC-V organization. The distinctions between CISC and RISC are complex and varied, but notable are the trade-offs between the two in terms of power efficiency, aspects of performance, and the overall complexity in silicon design that is required. As such, each of CISC and RISC hold their respective places in certain of embedded systems, low power computing, to mobile and high-performance servers and data centers, though RISC ISAs like Arm continue to be used in broader contexts.

52. A simple example of an instruction within an ISA would be an arithmetic ADD instruction. The ADD instruction would consume two inputs that comprise two integer numbers to be added together, and produce a third output that is the result of the ADD operation. The values of the two inputs, and the resulting output, would be stored in the registers of the CPU. The ISA’s ADD instruction would then be defined as ADD Ra, Rb, Rc, where registers Ra, Rb, and Rc are various registers within the CPU. The instruction would take the value stored in register Ra, add it to the value stored in register Rb, and store the result in register Rc. In practice, a modern CPU will have hundreds, if not thousands, of such types of instructions that comprise its overall ISA.

53. The ISA will also define things such as memory addressing modes that are available within the microprocessor. Addressing modes are the means by which registers can be accessed,

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

which have varying trade-offs and functionality. One addressing mode would be “Immediate Addressing,” whereby the microprocessor can take a given register such as R1, and immediately add the number 5 to it with an Immediate Addressing instruction such as “ADD R1, #5.” Register Addressing is another type of common Addressing Mode, whereby instead of adding the constant 5 to register R1, the microprocessor can add the contents of a second register to R1. An example of this would be “ADD R1, R3” whereby the contents of microprocessor register R1 is added to the contents of R3, with the result stored into R1 by overwriting the previous contents of R1. Another variant of Register Addressing is to perform the same ADD operation using three registers instead of two. An example of this would be “ADD R4, R1, R3” in which the contents of registers R1 and R3 are added, but now stored in the result of R4 rather than overwriting R1.

54. Similar to these arithmetic operations, the Addressing Modes are also used to load and store values from locations in memory. Examples of this are Direct (Absolute) Addressing, whereby a LOAD instruction can load the register R1 with the immediate value 1000 such as “LOAD R1, 1000.” Other addressing modes such as Indirect Addressing are commonly available whereby the contents of a location in memory pointed to by a register can be loaded into another register for use. An example of this would be “LOAD R1, (R2)” whereby the contents of the memory address stored in register R2 is loaded into register R1. In practice there are a number of variants to these addressing modes that add functionality and complexity to the microprocessor architecture, but also benefit programmers, software developers and development tools writers in creating the best performing system possible.

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

3. Arm’s Instruction Set Architecture

a. History of Arm’s ISA

55. Arm has been developing CPU technology for nearly 50 years.⁴⁴ In 1978, Chris Curry and Hermann Hauser started Acorn Computers, a start-up that built the foundation for Arm’s modern processor technology.⁴⁵ Acorn secured the rights to build the BBC Micro, which was a UK government initiative that was intended to have every classroom in the UK equipped with a computer.⁴⁶ Part of the work performed by Acorn’s founders involved developing the first ever Arm processor, called the ARM1, which was built on Arm’s first architecture.⁴⁷

56. ARM2 quickly followed, with the first product using the ARM2 processor being released in 1986.⁴⁸ The ARM3 processor then followed in 1989 and introduced a 4 KB cache that further enhanced performance.⁴⁹

57. In November 1990, Arm was officially founded as Advanced RISC Machines Ltd, which was a joint venture that involved Acorn Computers, Apple Computer (now Apple Inc.) and VLSI Technology (now NXP Semiconductors N.V.).⁵⁰ In 1991, Arm introduced the ARM6

⁴⁴ See <https://newsroom.arm.com/blog/arm-official-history>; see also Arm Holdings Limited Form F-1 (filed with the Securities and Exchange Commission on August 21, 2023) at 3–4 (“Our Journey”).

⁴⁵ *Id.*

⁴⁶ *Id.*

⁴⁷ See <https://newsroom.arm.com/blog/evolution-of-arm-architecture-evolution-40-years#:~:text=In%201987%2C%20Acorn%20Computers%20launched,was%20a%20huge%20commercial%20success.>

⁴⁸ *Id.*

⁴⁹ <https://en.wikichip.org/wiki/acorn/microarchitectures/arm3>; see also https://www.techmonitor.ai/technology/acorn_computers_has_high_hopes_for_its_third_generation_risc_with_on_board_cache.

⁵⁰ See <https://newsroom.arm.com/blog/arm-official-history>; see also Arm Holdings Limited Form F-1 (filed with the Securities and Exchange Commission on August 21, 2023) at 3–4 (“Our Journey”).

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

architecture that fully supported 32-bit processing and included features like a memory management unit (MMU).⁵¹

58. Around 1993, Arm began offering licenses to its cutting-edge processor technology.⁵² Throughout the 1990s and into the 2000s, Arm diversified its product line through Cortex-A (high-performance and efficiency in mobile), Cortex-R (focusing on highly specialized, real-time requirements), and Cortex-M (extremely low-power, low-cost cores for microcontrollers) CPU processors.⁵³

59. In 2005, Arm introduced the ARMv7 version of the architecture, which added multimedia and security features for the next generation of mobile phones.⁵⁴ The advent of smartphones around 2007 further increased demand for high-performance processors that used a low amount of power to maintain a long battery life for the device. Arm’s Cortex-A9 CPU multi-core processor excelled in this area, as did Arm’s innovative “big.LITTLE” approach, released in 2011, which combined a powerful core for high-performance with a lower-power core for improved battery life.⁵⁵

60. Arm publicly announced the Armv8-A version of the Arm architecture in October 2011, which introduced new 64-bit operating capabilities, called AArch64, and defined a

⁵¹ https://en.wikichip.org/wiki/arm_holdings/microarchitectures/arm6

⁵² See <https://newsroom.arm.com/blog/arm-official-history>; see also Arm Holdings Limited Form F-1 (filed with the Securities and Exchange Commission on August 21, 2023) at 3–4 (“Our Journey”).

⁵³ *Id.*

⁵⁴ See <https://www.allaboutcircuits.com/news/happy-40th-birthday-to-the-arm-architecture/#:~:text=The%20Rise%20of%20ARM%20in%20Mobile%20The,cemented%20its%20role%20in%20the%20mobile%20industry>.

⁵⁵ See <https://newsroom.arm.com/blog/arm-official-history>; see also Arm Holdings Limited Form F-1 (filed with the Securities and Exchange Commission on August 21, 2023) at 3–4 (“Our Journey”).

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

relationship to the prior 32-bit operating system, called AArch32.⁵⁶ On March 30, 2021, Arm publicly announced the Armv9 architecture, which Arm described as being a “response to the global demand for ubiquitous specialized processing with increasingly capable security and artificial intelligence (AI).”⁵⁷ [REDACTED]

[REDACTED] though, as I discuss in more detail in Section XIV below, [REDACTED]
[REDACTED]).

b. Arm Makes Its ISA Available for Licensing

61. Arm internally develops and sells designs (including RTL) for Arm-compliant CPU cores to various companies, including Qualcomm. However, Arm, through Architecture License Agreements (ALAs), also licenses certain companies, including Qualcomm, to design Arm-compliant CPU cores. In my experience, this practice is unlike other ISA providers. For example, Intel produces x86-compliant CPU cores but does not allow other companies (other than AMD) to design competing custom CPU cores that use Intel’s x86 architecture.

62. I have seen evidence and testimony from this case that supports my opinion. For example, Qualcomm’s CEO, Cristiano Amon testified that [REDACTED]

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

⁵⁶ [https://community.arm.com/arm-community-blogs/b/architectures-and-processors-blog/posts/the-armv8-a-architecture-and-its-ongoing-development#:~:text=ARMv8%2DA%2C%20the%20ARMv8%20A,partners%20as%20products%20are%20introduced; see also https://en.wikichip.org/wiki/arm/armv8](https://community.arm.com/arm-community-blogs/b/architectures-and-processors-blog/posts/the-armv8-a-architecture-and-its-ongoing-development#:~:text=ARMv8%2DA%2C%20the%20ARMv8%20A,partners%20as%20products%20are%20introduced;see%20also%20https://en.wikichip.org/wiki/arm/armv8).

⁵⁷ <https://newsroom.arm.com/news/arms-solution-to-the-future-needs-of-ai-security-and-specialized-computing-is-v9>.

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

[REDACTED]. As another example, Qualcomm’s SVP & General Manager for XR and Spatial Computing, Ziad Asghar testified that [REDACTED]

[REDACTED] Mr. Meacham offered similar testimony. Meacham Dep. Tr. at 8:25–9:4, 115:5–116:6. Further, Arm’s Chief Architect, Richard Grisenthwaite testified that, [REDACTED]

c. Arm’s ISA Has Many Technical Features and Benefits

63. Qualcomm’s expert, Mr. Posner, opines that “it may not matter much which ISA is used,” and has equated the selection of an ISA to having “people agree to drive on the left side or the right side of the road; it is not important which side is chosen as long as everyone agrees on the same side.” Posner Rpt. ¶ 22. I disagree.

64. Arm’s ISA has and continues to offer many technical features and benefits, particularly for certain use-cases such as mobile devices. At a high level, it is well understood in the industry that Arm’s processor architecture offers security benefits, performance benefits, energy-efficiency and low-heat benefits, scalability benefits, versatility benefits, simplicity benefits, size benefits, and cost benefits as compared with other processor architectures.⁵⁸ For example, the Arm ISA has been used in mobile phones for many years. Oftentimes the adaptability of the Arm ISA has allowed for very efficient power consumption by these devices that operate on battery power. Other extensions to the Arm ISA have provided for increased computational

⁵⁸ See, e.g., *Arm CPU Architecture: A Foundation for Computing Everywhere*, available at: <https://www.arm.com/architecture/cpu#:~:text=Arm%20CPU%20Architecture:%20A%20Foundation,Pervasive%20across%20markets%20and%20locations;What%20are%20Arm-based%20processors?> Available at: <https://cloud.google.com/discover/what-are-arm-based-processors>

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

performance by the additional of various SIMD type instructions, targeting mobile or multimedia. Arm processors have also been used in laptop computing type scenarios where a significant amount of computational power is required to run modern operating systems, software, and frameworks. The adaptability of the Arm ISA, in conjunction with the software development tools that target the Arm ISA, has led to its success in various areas of computing for many years.

65. The industry has recognized the technical features and benefits of Arm’s architecture. For example, Google’s Cloud business has written about these features and benefits in an article titled, “What are Arm-based processors?”⁵⁹ In this article, Google Cloud describes Arm’s architecture as offering many important technical features and benefits including:

- “increased energy efficiency,” which Google Cloud described as “[a] fundamental strength of the RISC architecture,” and that “translates to reduced operating costs, lower heat dissipation, and the ability to pack more processing power into a given thermal envelope,” “smaller size and lower heat generation,” which is “particularly beneficial in space-constrained environments and allows for more compact and efficient system designs,” “versatile usage³ for different types of technology”;
- “increasingly high performance”;
- “significant performance per watt, making them a compelling choice for modern, power-conscious computing environments”;
- “simpler instructions, which generally execute faster and require less power”;
- providing a “streamlined approach” that “leads to lower power consumption because fewer transistors are active during each instruction cycle”;
- the ability to “incorporate advanced features such as pipelining (overlapping instruction execution), superscalar execution (executing multiple instructions simultaneously), and sophisticated branch prediction to enhance performance while maintaining energy efficiency”;
- “lower” cost and “cost-effectiveness and sustainability due to the processors’ power efficiency, without compromising on the scalability and performance required by containerized environments”;

⁵⁹ ARMQC_02785607 (<https://cloud.google.com/discover/what-are-arm-based-processors>)

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

- the ability to run “complex operating systems and demanding applications”;
- “scalability and adaptability” that allows the Arm architecture “to be implemented across a wide spectrum of devices, from tiny sensors to powerful server CPUs” and makes Arm’s architecture “a foundational technology for the increasingly interconnected and diverse computing landscape”; and
- being “attractive for various business applications,” including “cloud computing” and “edge computing.”⁶⁰

66. In my opinion and based on my experience designing and working with processors that use a variety of different architectures, I agree that Arm’s innovative architecture allows for each of those features and benefits.

67. Google Cloud also compared Arm-based processors to processors that use Intel’s x86 with the following table,⁶¹ which also shows some of the technical benefits of the Arm architecture:

⁶⁰ *Id.*

⁶¹ *Id.*

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

How do Arm processors compare?		
The landscape of processors includes several key architectures. Here's a comparison highlighting Arm-based processors:		
Feature	Arm-based processors	Intel (X86) processors
Architecture	RISC (Reduced Instruction Set Computing)	CISC (Complex Instruction Set Computing)
Energy efficiency	Generally higher, designed for low power consumption	Historically lower, but improving with newer designs
Performance	Progressing rapidly, now competitive in many areas	Historically strong in high-performance computing
Cost	Often lower, especially for embedded and mobile applications	Can be higher, particularly for high-end server CPUs
Market presence	Dominant in mobile, growing in embedded, IoT, and servers	Dominant in desktop and traditional server markets
Instruction set	Simpler, fixed-length instructions	Complex, variable-length instructions

68. Google Cloud also dispelled several “myths” regarding Arm’s architecture as unsubstantiated, including the “Myth” that “Arm is only for low-power mobile devices,” the “Myth” that “The software ecosystem for Arm in HPC isn’t mature enough,” and the “Myth” that “Getting started with Arm for HPC is too complex for students or developers new to the architecture.”⁶²

69. LinkedIn has similarly written about the features and benefits of Arm’s architecture. For example, in an article titled, “How can ARM instruction set architecture improve

⁶² *Id.*

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

machine learning applications?,”⁶³ LinkedIn identified several technical features and benefits of Arm’s architecture, including:

- “simpler and fewer instructions than other architectures, such as x86”;
- “low-cost and low-power solutions”;
- “support [for] high-performance computing (HPC) and ML applications”; and
- “enhance[d] computational efficiency”

70. LinkedIn also identified several ways in which the Arm architecture offers technical features and benefits that are particularly useful for machine learning applications,⁶⁴ including:

- “ARM ISA supports ML by providing several features and extensions that optimize the processing of ML workloads. For example, ARM ISA supports vector processing, which allows the processor to perform the same operation on multiple data elements at once, such as adding or multiplying arrays of numbers. This is useful for ML tasks that involve matrix operations, such as neural networks.”
- “ARM ISA’s Scalable Vector Extension (SVE) ... enables the processor to adjust the vector length dynamically according to the data size and the available hardware resources. This improves the flexibility and efficiency of ML applications, as they can adapt to different scenarios and constrains.”
- “Features like vector processing and the Scalable Vector Extension (SVE) showcase ARM's commitment to addressing the complex demands of ML workloads.”
- “The dynamic adjustment of vector length aligns well with the adaptable nature of ML tasks, offering a versatile solution.”
- “ARM's support for ML within its ISA demonstrates a proactive stance in facilitating high-performance computing for modern ML applications.”
- Arm’s ISA “can improve the performance of ML applications without compromising the energy efficiency.”

⁶³ ARMQC_02785614 ([https://www.linkedin.com/advice/0/how-can-arm-instruction-set-architecture-improve-7r3oc#:~:text=from%20%20contributions.-,1%20What%20is%20ARM%20ISA%20and%20ML%20applications.&text=The%20ARM%20\(Advanced%20RISC%20Machine,in%20their%20machine%20learning%20applications\)](https://www.linkedin.com/advice/0/how-can-arm-instruction-set-architecture-improve-7r3oc#:~:text=from%20%20contributions.-,1%20What%20is%20ARM%20ISA%20and%20ML%20applications.&text=The%20ARM%20(Advanced%20RISC%20Machine,in%20their%20machine%20learning%20applications)))

⁶⁴ *Id.*

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

- “ARM processors can deliver high performance per watt, which means they can process more data with less power consumption. This is important for ML applications that run on battery-powered devices, such as smartphones or drones, or on large-scale systems, such as data centers or supercomputers, where energy costs are significant.”
- Arm’s ISA “can enable the scalability of ML applications, as it can support various levels of parallelism and heterogeneity.”
- “ARM processors can work in parallel with other processors, such as GPUs or FPGAs, to accelerate ML tasks and distribute the workload.”
- “ARM processors can ... support different types of cores, such as big and little cores, to balance the performance and efficiency demands of ML applications.”

71. I agree that Arm’s innovative architecture allows for each of those features and benefits.

72. There is further evidence of industry recognition that Arm’s processor architecture offers technical benefits. For example, in February 2024, it was announced that Arm and Neuro, a leading autonomous technology company, entered into a “multi-year collaboration to drive a scalable approach to the commercialization of autonomous vehicles with AI built into their foundations,” and “[a]s part of this partnership, Neuro is leveraging the leading-edge Arm® Automotive Enhanced (AE) technology to develop the next generation Nuro Driver™.” ARMQC_02720214.

73. As another example, in April 2024, it was announced that Google Cloud introduced custom Google Axion Processors for general-purpose compute and AI inference workloads based on the Armv9 architecture that “will power instances that deliver up to 60% better energy efficiency and up to 50% more performance than comparable current-generation x86-based instances.” ARMQC_02720220.

74. As another example, Google announced that the Google Nest Audio smart home speaker “leverages the quad-core Arm Cortex-A53 processor, enabling some processing on-device instead of relying solely on data centers,” which “makes it possible for Google Assistant to learn

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

the most common music commands and respond twice as fast than the original Google Home.” ARMQC_02720226; *see also* ARMQC_02720310.

75. As another example, it has been announced that Google’s Fitbit Ace LTE is a “kid-friendly, feature-rich smartwatch” based on Arm’s architecture technology, which allows it to “last more than 16 hours on one charge.” ARMQC_02720303.

76. As another example, in July 2022, it was announced that Arm had partnered with Cruise, the autonomous driving company, to help deliver “the first all-electric, driverless service to welcome public riders in a major US city.” ARMQC_02720230.

77. As another example, in January 2025, it was announced that Arm had partnered with the Aston Martin Aramco Formula One® Team as part of a “landmark multi-year partnership” in which Arm “join[ed] as the team’s Official AI Compute Platform Partner.” ARMQC_02720278; ARMQC_02720279.

78. As another example, Arm has partnered with Meta Platforms, Inc. to support AI technology development. ARMQC_02720249. This has included Arm’s collaboration with the PyTorch team at Meta on the new ExecuTorch Beta release which “bring[s] AI and machine learning (ML) capabilities to billions of edge devices, as well as millions of developers worldwide.” ARMQC_02720251. A press release discussing the Arm-Meta partnership for the Llama AI models noted that Arm’s technology “ensure[s] that Llama models operate seamlessly and efficiently across hardware platforms” and “enabl[es] optimizations that accelerate Llama model inference significantly.” ARMQC_02720329 at -329–31.

79. As another example, Arm has partnered with GitHub, a cloud-based platform for software developers, to accelerate and reduce the cost of development of, among other things, ML workflows. ARMQC_02720258; ARMQC_02720259; ARMQC_02720284;

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

ARMQC_02720291. According to a February 2025 press release, the “GitHub Copilot increases coding speed by 55% and developer confidence by 85%,” and the “Arm extension for GitHub Copilot has been specifically designed to simplify migration to the Arm architecture, reducing development time and costs.” ARMQC_02720284.

80. As another example, in November 2024, it was announced that Arm had partnered with Panasonic Automotive Systems to “standardiz[e] automotive architecture for Software-Defined Vehicles (SDVs) ... to meet the current and future needs for automotive.” ARMQC_02720265. According to the press release, this partnership involved “several key initiatives,” including “Utilizing VirtIO-based Unified HMI to standardize zonal architecture,” “Ensuring environmental parity from cloud to car,” and “Expanding VirtIO Standardization.” *Id.* at -265–66.

81. As another example, in February 2025, it was announced that the Armv9 edge AI platform, featuring the Arm Cortex-A320 CPU and the Arm Ethos-U85 NPU, could “enabl[e] AI models of over one billion parameters to run on-device” and the platform’s Armv9.2 architecture also brought “advanced security features like Pointer Authentication (PAC), Branch Target Authentication (BTI) and Memory Tagging Extension (MTE) to even the smallest Cortex-A devices.” ARMQC_02720292–94.

82. As another example, in January 2025, it was announced that Arm-based NVIDIA Drive AGX Thor, a centralized compute system, would leverage “the power and advanced capabilities of the Arm compute platform” to “deliver[] the AI capabilities that the next-generation consumer and commercial fleets demand.” ARMQC_02720272.

83. As another example, it has been announced that Arm has partnered with Simprints, a nonprofit company aiming to provide accurate, affordable solutions for providing biometric

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

systems for patient identification, to develop a portable scanner that could be used in an offline mode and can securely upload new patient data when connectivity is restored, to assist the approximately 1 billion people on Earth who lack formal proof of identity. ARMQC_02720300.

84. As another example, it has been announced that Fujitsu chose the Armv9 architecture for its FUJITSU-MONAKA processor “for its combination of adaptable hardware and a unified software ecosystem that supports scalability and customization” and allows Fujitsu to “build flexible, high-performance technology solutions that fuel rapid innovation and adapt to evolving demands.” ARMQC_02720315.

85. As another example, it has been announced that LG chose to build its OLED TVs using Arm’s architecture, which allows LG’s OLED TVs to “offer a significant leap forward in processing performance and picture quality for DTVs” and to leverage “AI workloads and technologies.” ARMQC_02720320.

86. As another example, it has been announced that Arm and Lotus, a global leader in luxury electric vehicles, have partnered to improve driving safety and innovation by delivering “groundbreaking innovations that prioritize safety while redefining the driving experience for passionate enthusiasts,” for which “Arm technology plays a crucial role in the safety of vehicles both for autonomous driving and human driving.” ARMQC_02720324. For example, the press release notes that “Arm technology is integral to vehicle safety in both autonomous and human-driven contexts” including because it “enabl[es] systems to detect, diagnose, and mitigate faults effectively” with is “safety-certified IP and software test libraries.” *Id.* at -324-26.

87. As another example, it has been announced that Arm and Rainforest Connection, a non-profit technology startup, have partnered to develop acoustic monitoring systems, called Guardians, that use Arm-powered CPUs and machine learning to detect illegal deforestation and

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

poaching, “act[ing] as ears in the heart of the rainforest,” which Arm’s architecture allows these systems to “run in AI/ML models both in the cloud and on the devices themselves, adapting in real time to real-world needs,” and, in particular, the “Armv9 architecture can extend the power of specialized neural net processing, supporting the Rainforest Connection mission with even more capable tools to protect rainforests – and the health of the planet.” ARMQC_02720333 at -333–34.

88. As another example, Arm has announced that innovators at Beewise, a technology company, have used Arm’s architecture to develop robotic beehives (named “Beehomes”) to provide a safe haven for bees and offer “limitless flexibility for beekeepers,” which has allowed bee mortality rates to “decreas[e] by as much as 80%” because Arm’s “state-of-the-art architecture provides robotic brood box management and computer vision-based monitoring while it keeps track of automated honey harvesting, pest control, and thermoregulation.” ARMQC_02720337 at -337–339.

89. As another example, Arm has announced that Mercedes-Benz has chosen to use Arm’s architecture technology as “a central piece of the compute of the core in our main partner chips that we’re leveraging today” for software-defined vehicles, because Arm’s architecture enables “[p]ower-efficient computing [that] is essential to maximizing the range of electric vehicles, reducing mass, and keeping overall vehicle costs low.” ARMQC_02720342 at -342–44.

90. As another example, Arm has announced that Arm’s architecture has enabled applied VR platforms in many applications, including “[t]he world’s first VR platform designed specifically for healthcare” that “provides patients with an escape from their everyday, as well as the tools that help them build skills for managing their pain.” ARMQC_02720347.

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

91. As another example, Arm has announced that Shanghai-based MegaHealth has chosen to use Arm’s architecture to power the “MegaRing,” which is “a medical pulse oximeter that can be worn on a finger to continuously monitor heart rate and oxygen saturation, and detect changes that might indicate early signs of hypoxemia, or less-than-safe levels of oxygen in the blood,” because of the technical benefits of the Arm architecture, including because it “enables SpO2 signal acquisition and algorithm operation.” ARMQC_02720352.

4. Non-Arm ISAs

a. Many ISAs Are Available

92. There are several non-Arm ISAs in the market, including the RISC-V, MIPS, and Intel x86 ISAs I mentioned above. Many of these ISAs have seen great success in different areas of computing. For example, the MIPS ISA was widely used in high power workstations, gaming consoles such as the first Sony PlayStation and various Nintendo systems, as well as computer network switches and routers. The Intel x86 ISA has been widely successful in the area of desktop computing and laptops, as well as data centers and certain consumer electronics such as various Microsoft Xbox gaming consoles. The Sun Microsystems SPARC architecture, another RISC architecture design, targeted high performance workstations, the server market, as well as high performance computing and certain telecommunications applications. As I discuss elsewhere in this report, RISC-V too has shown traction in areas such as embedded computing and Internet of Things applications, as well as microcontroller design to name a few. These examples are a very select few, as there have been many companies that produce and offer their own CPU ISAs for areas such as high performance computing, embedded systems, multimedia and telecommunications to name a few.

93. As one can imagine, a certain ISA may be well tailored to a certain type of computing application space, while not being as well suited to others. For example, an Intel x86

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

ISA that is tailored for desktop and high performance computing may not be ideal for ultra low-power edge of network sensing applications. Similarly, a multimedia and digital signal processing ISA that is tailored for video codecs or wireless telecommunications, for example, may not be suited for running Linux or the Microsoft Windows operating system. Companies may choose to design their custom CPUs with these architectures, with each having certain benefits and drawbacks. Both Arm and Qualcomm witnesses agree with my assessment.

94. Arm’s Chief Architect, Richard Grisenthwaite, testified that [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] As

another example, Arm Distinguished Engineer, Michael Williams, testified that, [REDACTED]

[REDACTED]

[REDACTED]

95. Arm’s SVP of Technology, Peter Greenhalgh testified that [REDACTED]

[REDACTED]

[REDACTED], and Arm’s Vice President of Partner Success and Licensing, Andrew Howard testified that

[REDACTED]

[REDACTED]

[REDACTED] Further, Arm’s Senior Director of Engineering, Aparajita Bhattacharya testified that

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

[REDACTED] and Arm’s VP of Sales, Lynn Couillard

testified that [REDACTED]

96. Qualcomm’s witnesses agree. For example, Qualcomm’s CEO, Cristiano Amon testified that [REDACTED]

[REDACTED] As another example, Qualcomm’s SVP & General Manager for XR and Spatial Computing, Ziad Asghar testified that [REDACTED]

[REDACTED] Further, Richard Meacham, Qualcomm’s Principal Engineer for Automotive CPUs, testified that [REDACTED]

[REDACTED], and Jean-Francois (Jeff) Vidon also testified that [REDACTED]

97. This is consistent with my experience designing and verifying architectural compliance for CPU cores that used various types of computer architectures. This testimony is also consistent with my experience researching and expanding these architectures for new instructions or implementing the existing architecture and validating it in new environments (*e.g.*, design simulation from a spec sheet definition of the ISA).

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

98. I have worked on a number of experimental and academic instruction set architectures over the past 20+ years. For example, I worked on MIPS Technologies’ MIPS R4000, a high performance RISC based ISA used in both high-performance workstations and servers, as well as networking and embedded systems. As another example, I worked on Texas Instruments’ TMS3206200 (‘C62x) ISA and Texas Instruments’ TMS320C6400 (‘C64x), which are a fixed-point, Very Long Instruction Word (VLIW) architectures tailored for high performance and power efficiency. I have also worked on the Freescale/NXP StarCore SC3900 FP, a high performance, flexible vector processor for wireless infrastructure, targeting high performance and low power capabilities. As another example, I have worked in Intel’s Microprocessor Research Labs during the design of Itanium, an Explicitly Parallel instruction Computing (EPIC) architecture, and the relation of the ISA to programming languages and compilation technology. These architectures were often tailored to different application spaces, ranging from embedded devices, wired and wireless digital networking, and multimedia and digital signal processing systems.

99. I have also instructed, and worked hands on with various Arm based architectures and their CPU ISAs. This has included both the development of software and applications for these architectures, as well as working on developer tools that target Arm architectures, such as optimizing C and C++ compilers. I have also worked with various Intel architectures, both during my time at Intel Microprocessor Research labs on the Itanium family of processors, as well as the development of software and applications using the Intel x86 architecture.

b. RISC-V

100. In my opinion, RISC-V is one example of an alternative architecture to the Arm architecture and can be used to create custom CPU core designs. I am a member of the RISC-V

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

Foundation Technical Committee and have been since 2018. RISC-V is an open CPU instruction set architecture based on established reduced instruction set computing (RISC) principles.

101. RISC-V is a technology that can be available as an alternative to the ARM architecture.⁶⁵ RISC-V is a free and open standard instruction set architecture that is used in both academic research as well as in industry.⁶⁶ RISC-V and its ecosystem can be used as the basis for designing custom CPU architectures for a variety of computing workloads, while also leveraging the RISC-V developer tools ecosystem for the development of software applications and functionality on a given RISC-V implementation.⁶⁷ The range of devices that have been designed using RISC-V include microcontrollers, embedded systems, computer hard drives and data center solutions.⁶⁸

102. Qualcomm has likewise recognized advantages of the RISC-V architecture. For example, in a public 2023 Qualcomm article titled “What is RISC-V, and why we’re unlocking its potential,” Qualcomm stated that there are “3 main advantages of RISC-V”: “[f]lexibility,” “[c]ontrol,” and “[v]isibility”:

Flexibility: RISC-V offers a unique set of features that allow users to customize and optimize both software and hardware for specific use cases, resulting in faster development cycles and better design tradeoffs for performance, power and area.

Control: This open ISA provides designers and developers with greater control over their computing environments, allowing them to fine-tune their systems without relying on third parties or incurring additional license fees associated with proprietary architectures.

⁶⁵ See <https://riscv.org/about/>

⁶⁶ *Id.*

⁶⁷ *Id.*

⁶⁸ *Id.*

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

Visibility: The open-standard nature of RISC-V also means that developers have more visibility into the codebase, making it easier to understand the roadmap and identify potential security risks before they become an issue.

Asghar Dep. Ex. 6 at 5.

103. I have seen evidence that Qualcomm is investing in and considering using the RISC-V architecture for its custom CPU core designs. I have also seen evidence that Qualcomm has considered fully transitioning its custom CPU core development to RISC-V, away from Arm’s architecture.

104. Several Qualcomm witnesses have testified about Qualcomm’s RISC-V plans. Notably, Mr. Amon testified that [REDACTED]

[REDACTED]. Further, Mr. Vidon testified that [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

[REDACTED] Mr. Vidon further testified that [REDACTED]
[REDACTED]

[REDACTED] Mr. Vidon also testified that [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

105. As another example, Mr. Meacham testified that [REDACTED]
[REDACTED]

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

[REDACTED]

[REDACTED]

[REDACTED] Mr. Meacham also testified that [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] Further, Mr. Meacham testified [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

106. As another example, Mr. Asghar testified that [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] Mr. Asghar also testified that

[REDACTED]

[REDACTED] Mr. Asghar likewise made public statements regarding

Qualcomm’s view of RISC-V. For example, in the public 2023 Qualcomm article titled “What is RISC-V, and why we’re unlocking its potential,” Mr. Asghar stated that “RISC-V makes sense for pretty much all use cases,” that “we [Qualcomm] invested in multiple RISC-V based companies” and “have also been integrating these cores into our products since 2019.” Asghar Dep. Ex. 6 at 7–8.

107. Further, Qualcomm’s Senior Vice President and General Manager of Technology Planning and Solutions and Data Center, Durga Malladi testified that [REDACTED]

[REDACTED]

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

[REDACTED]

[REDACTED]

[REDACTED]

108. As another example, Qualcomm’s Senior Director, CPU, DSP, Benchmarking, and AI Hardware, Karl Whealton testified that [REDACTED]

[REDACTED] Further, Qualcomm’s Director of Sourcing, Kurt Wolf testified that [REDACTED]

[REDACTED]

[REDACTED]

109. Further, additional Qualcomm documents suggest that Qualcomm is investing in and considering using the RISC-V architecture for its custom CPU core designs. *See, e.g.*, QCVARM_0537065; QCVARM_0527125; QCVARM_0468422; Asghar Dep. Ex. 7; QCVARM_0462995 at -004–005; QCVARM_0463559 at -562; QCVARM_0449653; QCVARM_0534596; QCVARM_0534597 at -599, -603, -605–606, -609; QCVARM_0571333 at -334, -337, 338, -348; QCVARM_0524775; QCARM_3522895; QCVARM_0449658; QCVARM_0608391; QCVARM_0532239, QCVARM_0529887 at -900–902; QCARM_3430479; QCVARM_0537065 at -067–068; Malladi Dep. Exs. 3–4.

110. This evidence is consistent with my understanding. In my opinion, RISC-V is an alternative architecture to the Arm architecture and can be used to create custom CPU core designs.

B. Many Companies Design CPU Cores

111. Arm is not the only company that designs CPU cores. I am aware of several companies other than Arm that design their own CPU cores. These companies include Qualcomm, Apple, Intel, AMD, SiFive, Akeana, Rivos, Ventana, Imagination Technologies, and Andes.

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

112. I have seen evidence from this case that demonstrates this point. For example, Qualcomm’s SVP & General Manager for XR and Spatial Computing, Ziad Asghar testified that

[REDACTED]

[REDACTED]

[REDACTED] As another example, Qualcomm’s Principal Engineer for Automotive CPUs, Richard Meacham testified that

[REDACTED]

[REDACTED] As another example, Qualcomm’s Senior Director of Engineering, Jean-Francois (Jeff) Vidon testified that [REDACTED]

[REDACTED]

113. As noted, Arm licenses its instruction set architecture to companies under ALA agreements that allow those ALA partners to design their own custom CPU cores. These companies include [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

C. Many Companies Sell Silicon Chips

114. Qualcomm’s expert, Mr. Posner, has offered opinions about Arm’s attempts to design and sell its own SoCs. *See, e.g.*, Posner Rpt. ¶¶ 44, 64, 67–79, 88. Based on my knowledge of the industry, I am aware of many companies that sell or vertically integrate SoCs, including Qualcomm, Intel, AMD, Apple, Infineon, Renesas, Samsung, MediaTek, Huawei, Texas Instruments, Analog Devices, NXP, and Broadcom.

115. I have seen evidence from this case that demonstrates this point. For example, Qualcomm’s SVP & General Manager for XR and Spatial Computing, Ziad Asghar testified that

[REDACTED]

[REDACTED]

[REDACTED] As another example, Qualcomm’s Principal Engineer for Automotive CPUs, Richard Meacham testified that [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] As another example, Qualcomm’s Senior Director of Engineering, Jean-Francois (Jeff) Vidon testified that [REDACTED]

[REDACTED]

[REDACTED]

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

IX. RELEVANT AGREEMENTS

116. I understand that one of the agreements at-issue in this case is an Architecture License Agreement (ALA) entered into between Arm Limited and Qualcomm Global Trading PTE., LTD on May 31, 2013. ARM_00055357. I am not an attorney and I offer no opinions regarding contract interpretation. In my understanding, ALAs grant rights to certain Arm technology that ALA partners use to design their own custom CPU cores that are compatible with Arm’s ISA. This contrasts with a Technology License Agreement (TLA), through which a partner obtains a license to a core (including RTL) that Arm designed.

117. I understand that there are several Annex 1s to the Arm-Qualcomm ALA. Specifically, I understand that there is an Annex 1 for the “Armv8-A Architecture.” (ARM_00063298). I further understand that there is an Annex 1 for the “v8 Next Architecture” (QCARM_0338573), and an Annex 1 for the “Armv9-A Architecture” (QCARM_0343954), which states that it shall [REDACTED]

[REDACTED] I understand these Annex 1s provide information regarding the parties’ obligations under the ALA with respect to a particular version of Arm’s architecture (e.g., the v8-A or the v9-A version). For example, I understand the ALA defines

[REDACTED]
[REDACTED]
ARM_00055357 at -357, § 1.3. The cover of the v8 Annex 1 lists the [REDACTED]

[REDACTED]. ARM_00063298. The cover of the v8 Next Annex 1 lists the [REDACTED]

[REDACTED]. QCARM_0338573. The cover of the v9 Annex 1 lists the [REDACTED]

[REDACTED]. QCARM_0343954.

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

118. The v8 and v9 Annex 1s each contain a [REDACTED]
ARM_00063298 at -299–300; QCARM_0343954 at -955–57. These [REDACTED]
[REDACTED] I provide my technical understanding of each
of these technologies below.

A. [REDACTED] In [REDACTED] Of The v8 Annex 1 To The ALA

119. [REDACTED]
[REDACTED]
[REDACTED] ARM_00063298 at -299–300. [REDACTED]
Qualcomm’s corporate representative on its custom core verification efforts, Jignesh Trivedi,
testified that [REDACTED]
[REDACTED]
[REDACTED]. Trivedi Dep. Tr. at 85:2–19. I therefore focus my discussion below
in the parts listed in [REDACTED]

120. [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED] ARM_00063298 at -299–300.

1. [REDACTED]

121. [REDACTED]
[REDACTED] ARM_00063298 at -299. This
is sometimes referred to as the Arm ARM. Trivedi Dep. Tr. at 56:3–16. The Arm ARM is

⁶⁹ I understand that [REDACTED] is a defined term in the ALA. I offer no opinions regarding whether technologies are or are not [REDACTED] under the terms of the ALA. My use of the term [REDACTED] is based on my experience, not any particular contract language.

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

available for download on Arm’s website.⁷⁰ While I have not reviewed all of the approximately 15,000 pages of the Arm ARM for A-profile architecture, I reviewed it generally and am familiar with it. The Arm ARM describes the operation of an Armv8-A and Armv9-A Processing Element (PE) and includes descriptions of:

- The two Execution states, AArch64 and AArch32;
- The instruction sets;
- The states that determine how a PE operates;
- The Exception model;
- The interprocessing model;
- The memory model;
- The programmers’ model;
- The Advanced SIMD and floating-point instructions;
- The security model;
- The virtualization model; and
- The Debug architecture.⁷¹

122. The Arm ARM gives the assembler syntax for the instructions it describes, which means that it describes instructions in textual form. As Arm’s Chief Architect, Richard Grisenthwaite explained, “[t]he ARM ARM is written as the description of the behavior of an abstract machine to which the implementations must be compliant, must do the same as that machine.” 11/15/2023 Grisenthwaite Dep. Tr. at 102:12–103:1. The Arm ARM is referenced by

⁷⁰ Arm Architecture Reference Manual for A-profile architecture (Doc No. ARM DDI 0487; issued April 30, 2025), available at <https://developer.arm.com/documentation/ddi0487/latest/>. Older versions of the Arm ARM have been produced in this case. *See, e.g.*, QCVARM_0986448, QCVARM_0999388, QCVARM_0973928.

⁷¹ *Id.*

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

Arm and by Arm’s ALA partners. For example, Vivek Agrawal, an Arm engineer in Arm’s architecture compliance kit support group, testified that [REDACTED]

[REDACTED] And, Qualcomm’s corporate representative on its custom core verification efforts, Jignesh Trivedi, testified that [REDACTED]

[REDACTED] I have seen evidence showing that Arm made the Arm ARM available to Qualcomm. To start, as I noted above, Arm makes the ARM available to access on its website (subject to limitations on its use, including the need for a license, as set forth in the Arm ARM itself).⁷³ Further, the v8 Annex 1 [REDACTED]

[REDACTED] Also, Martin Weidmann, Arm’s corporate representative on Arm’s provision of materials to Qualcomm, testified that [REDACTED]

⁷² I understand that some witnesses have been deposed on multiple occasions—in the *Arm v. Qualcomm* case and in this case. In this report, all deposition citations are to the depositions taken in this case, unless a date is included in the citation, in which case it is a citation to their deposition from the *Arm v. Qualcomm* case.

⁷³ Arm Architecture Reference Manual for A-profile architecture (Doc No. ARM DDI 0487; issued April 30, 2025), available at <https://developer.arm.com/documentation/ddi0487/latest/>.

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

[REDACTED]

[REDACTED]

[REDACTED] Further, Qualcomm does not contend that Arm withheld the Armv8-A [REDACTED] from Qualcomm. Trivedi Dep. Tr. at 65:7–20.

123. The [REDACTED] [REDACTED]
ARM_00063298 at -299. I have seen evidence showing that Arm made the [REDACTED]
[REDACTED] available to Qualcomm. For example, the v8 Annex 1 [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

Further, Qualcomm does not contend that Arm withheld the [REDACTED]
from Qualcomm. *See* Trivedi Dep. Tr. at 68:8–14.

124. The [REDACTED] [REDACTED]
ARM_00063298 at -299. I have seen evidence showing that Arm made the [REDACTED]
[REDACTED] available to Qualcomm. For example, the v8 Annex 1 [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

[REDACTED]). Further, Qualcomm does not contend that Arm withheld the [REDACTED] from Qualcomm. *See* Trivedi Dep. Tr. at 70:2–5.

125. The [REDACTED] [REDACTED] ARM_00063298 at -299. [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED] [REDACTED]
[REDACTED].⁷⁵ Qualcomm does not contend that Arm withheld the [REDACTED] from Qualcomm. Trivedi Dep. Tr. at 70:16–20.

126. The [REDACTED] [REDACTED] ARM_00063298 at -299. Arm makes periodic updates to the [REDACTED].⁷⁶ When Arm makes these updates, Arm typically includes release notes that describe the updates. *See* Trivedi Dep. Tr. at 71:1–4. Qualcomm does not contend that Arm withheld the [REDACTED] from Qualcomm. *Id.* at 71:5–7.

127. The [REDACTED] [REDACTED] ARM_00063298 at -299. This list identifies potential errors or limitations of the [REDACTED]

[REDACTED]

⁷⁵ *See id.*; *see also* Trivedi Dep. Tr. at 70:6–15.

[REDACTED]

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

Architecture.⁷⁷ Qualcomm does not contend that Arm withheld the [REDACTED]

[REDACTED] from Qualcomm. Trivedi Dep. Tr. at 71:17–21.

2. [REDACTED]

128. [REDACTED], [REDACTED]. The first is the [REDACTED] ARM_00063298 at -299. The v8

Annex 1 defines [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] ARM_00063298 at -302, [REDACTED]

[REDACTED]. For the Armv9-A version of the Arm architecture, the name of the [REDACTED]

[REDACTED] Weidmann Dep. Tr. at 97:20–99:2; ARM_01238132 at -132–133; ARMQC_02732558. The [REDACTED] is more commonly referred to as the ACK. Grisenthwaite Dep. Tr. at 144:8–16; ARMQC_02732558. I describe the ACK in more detail in Section X.A below. I also explain how the ACK, which I consider a technical deliverable in the context of Arm’s architecture compliance verification process, differs from an Out-of-Box package (OOB) and from an ACK patch, both of which I consider to be support materials from a technical perspective. *See* Sections XI.A and XI.B.

⁷⁷ *See* <https://developer.arm.com/documentation/ddi0440/c/introduction/about-the-etm-m4>; <https://developer.arm.com/documentation/102119/0200/Trace-components/Embedded-Trace-Macrocell-Trace-source>; *see also* Trivedi Dep. Tr. at 71:12–16..

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

129. I have seen evidence showing that Arm provided the Armv8 ACK, and each quarterly release of the Armv8 ACK, to Qualcomm. For example, [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

130. Qualcomm does not dispute that [REDACTED]

[REDACTED]

[REDACTED]

131. The [REDACTED]

[REDACTED] ARM_00063298 at -299. Arm [REDACTED], so the evidence I have seen showing that Arm provided the Armv8-A ACK to Qualcomm also applies to the [REDACTED]. *See supra; see also* Trivedi Dep. Tr. at 82:7–13. Qualcomm does not contend that Arm withheld the [REDACTED] from Qualcomm. *Id.* at 82:14–17.

3. [REDACTED]

132. [REDACTED]

[REDACTED] ARM_00063298 at -300. As I explained above the [REDACTED], [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED].⁷⁸ The [REDACTED] is a [REDACTED]

⁷⁸ [REDACTED]

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

that confirms that the [REDACTED] feature is functioning properly.⁷⁹ Qualcomm does not contend that Arm withheld the [REDACTED] from Qualcomm. Trivedi Dep. Tr. at 83:11–13.

133. The [REDACTED] [REDACTED]
[REDACTED] ARM_00063298 at -300. This list identifies potential errors or limitations of the [REDACTED]
[REDACTED]⁸⁰ Qualcomm does not contend that Arm withheld the [REDACTED]
[REDACTED] from Qualcomm. Trivedi Dep. Tr. at 83:18–21.

4. [REDACTED]

134. [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED] *Id.* [REDACTED]
[REDACTED]
[REDACTED]⁸¹ Qualcomm does not contend that Arm withheld any of these [REDACTED]
in [REDACTED] from Qualcomm. Trivedi Dep. Tr. at 83:23–84:24.

B. [REDACTED] In [REDACTED] Of The v9 Annex 1 To The ALA

135. [REDACTED]
[REDACTED] QCARM_0343954 at -955–

⁷⁹ [REDACTED] *see also* Trivedi Dep. Tr. at 83:5–10.

⁸⁰ [REDACTED]

⁸¹ [REDACTED] G. Williams Dep. Tr. at 114:18–115:4.

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

57. Within [REDACTED]. Within [REDACTED]

that, in turn, [REDACTED] by [REDACTED]

1. [REDACTED]

136. [REDACTED]

[REDACTED] [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] [REDACTED]

QCARM_0343954 at -956. Richard Grisenthwaite testified that [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]. I have seen evidence showing that Arm made the Armv9-A [REDACTED]

[REDACTED] to Qualcomm. For example, the Armv9-A Annex 1 [REDACTED] [REDACTED]

[REDACTED] QCARM_0343954

at -956. [REDACTED]

[REDACTED]

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

137. Qualcomm does not contend that Arm withheld the [REDACTED] [REDACTED] from Qualcomm. Trivedi Dep. Tr. at 88:1–4.

138. The [REDACTED] [REDACTED] [REDACTED] QCARM_0343954 at -956. I have seen evidence showing that Arm made the [REDACTED]

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

[REDACTED] available to Qualcomm. For example, the v9 Annex 1 lists the [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] At his deposition, Mr. Trivedi testified that [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

Qualcomm does not contend that Arm withheld the [REDACTED] from Qualcomm.

139. The [REDACTED] [REDACTED]

[REDACTED] QCARM_0343954 at -956. Arm typically provides information about new releases in release notes. I have seen evidence showing that Arm made the Armv9-A [REDACTED]

[REDACTED] available to Qualcomm. For example, the v9 Annex 1 [REDACTED] [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] Qualcomm does not contend that Arm withheld the [REDACTED]

[REDACTED] from Qualcomm. Trivedi Dep. Tr. at 88:20–22.

140. Under [REDACTED] the v9 Annex 1 simply [REDACTED] [REDACTED]

QCARM_0343954 at -956.

2. [REDACTED]

141. The second [REDACTED]

[REDACTED] QCARM_0343954 at -956. Under this [REDACTED] heading is the [REDACTED]

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

[REDACTED]

[REDACTED] *Id.* Under [REDACTED] the v9 Annex 1 simply lists [REDACTED]

142. Under [REDACTED]

[REDACTED] The first is [REDACTED] *Id.*

This is [REDACTED]
ARMQC_02732558. As I explain in more detail in Section X.A below, the ACK is a suite of tens of thousands of tests that, when run, each return one of three results: pass, fail, or skip. I have seen evidence showing that Arm provided the Armv9-A ACK and each quarterly release of the Armv9-A ACK to Qualcomm. For example, [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

143. Qualcomm does not dispute that Arm provided what Qualcomm’s corporate representative, Jignesh Trivedi, referred to as the [REDACTED]

[REDACTED]

144. The [REDACTED] [REDACTED]

[REDACTED] QCARM_0343954 at -956. The Arm ETE is the [REDACTED]

[REDACTED], which has many similarities with the Arm ETMv4 architecture, which I described above with respect to the Armv8-A architecture. It creates a trace programming and decode environment for the Armv9-A architecture.⁸² Qualcomm contends that Arm failed to provide Qualcomm with support for configuring the ETE Checker, which I disagree with and discuss in more detail in Section XI.C of this Report, however, Qualcomm does not contend that Arm withheld the [REDACTED] from Qualcomm, because [REDACTED]

[REDACTED]

145. The [REDACTED] [REDACTED]

[REDACTED] QCARM_0343954 at -956. Like the [REDACTED]

[REDACTED], Qualcomm does not contend that Arm withheld the [REDACTED]

⁸² See <https://developer.arm.com/documentation/102856/0100/Embedded-Trace-Extension>.

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

[REDACTED] from Qualcomm, because [REDACTED]

[REDACTED]

3. [REDACTED]

146. The [REDACTED] [REDACTED]
QCARM_0343954 at -956. Under this [REDACTED] heading is the [REDACTED]

[REDACTED]

[REDACTED] *Id.*

147. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] *Id.* These are the architecture specifications and compliance kit for System Memory Management Unit (SMMU), which is a hardware component that translates IO virtual addresses into physical addresses for devices performing Direct Memory Access (DMA).⁸³ [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] Qualcomm does not contend that Arm withheld either of these parts from Qualcomm. *See* Trivedi Dep. Tr. at 91:13–22.

⁸³ *See* <https://www.openeuler.org/en/blog/wxggg/2020-11-21-iommu-smmu-intro.html>; *see also* <https://developer.arm.com/documentation/109242/0100/What-an-SMMU-does>.

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

4. [REDACTED]

148. [REDACTED] QCARM_0343954

at -957. I am not aware of any claim by Qualcomm alleging that Arm withheld anything relating to [REDACTED].

C. How Arm Provides The [REDACTED] [REDACTED] Of The v8 And v9 Annex 1s To Partners, Including Qualcomm

149. Arm provides the [REDACTED] [REDACTED] of the v8 and v9 Annex 1s to all ALA partners, including Qualcomm, through a centralized database called Product Download Hub (PDH) (formerly, Arm Connect). [REDACTED]

[REDACTED] Further, Martin Weidmann testified that [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED] Mr. Weidmann

further testified that [REDACTED]
[REDACTED] Mr. Weidmann further testified that [REDACTED]
[REDACTED]

[REDACTED] Similarly, Mr. Trivedi testified that [REDACTED]
[REDACTED]

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

[REDACTED]

[REDACTED]

150. Arm also operates a separate database, called Causeway (formerly DropZone), which Arm uses for partner-specific communications and for delivery of partner-specific support materials. As I explain in more detail below, when Arm provides CPU-specific OOBs and ACK patches to partners, Arm generally does so through this partner-specific database. For example,

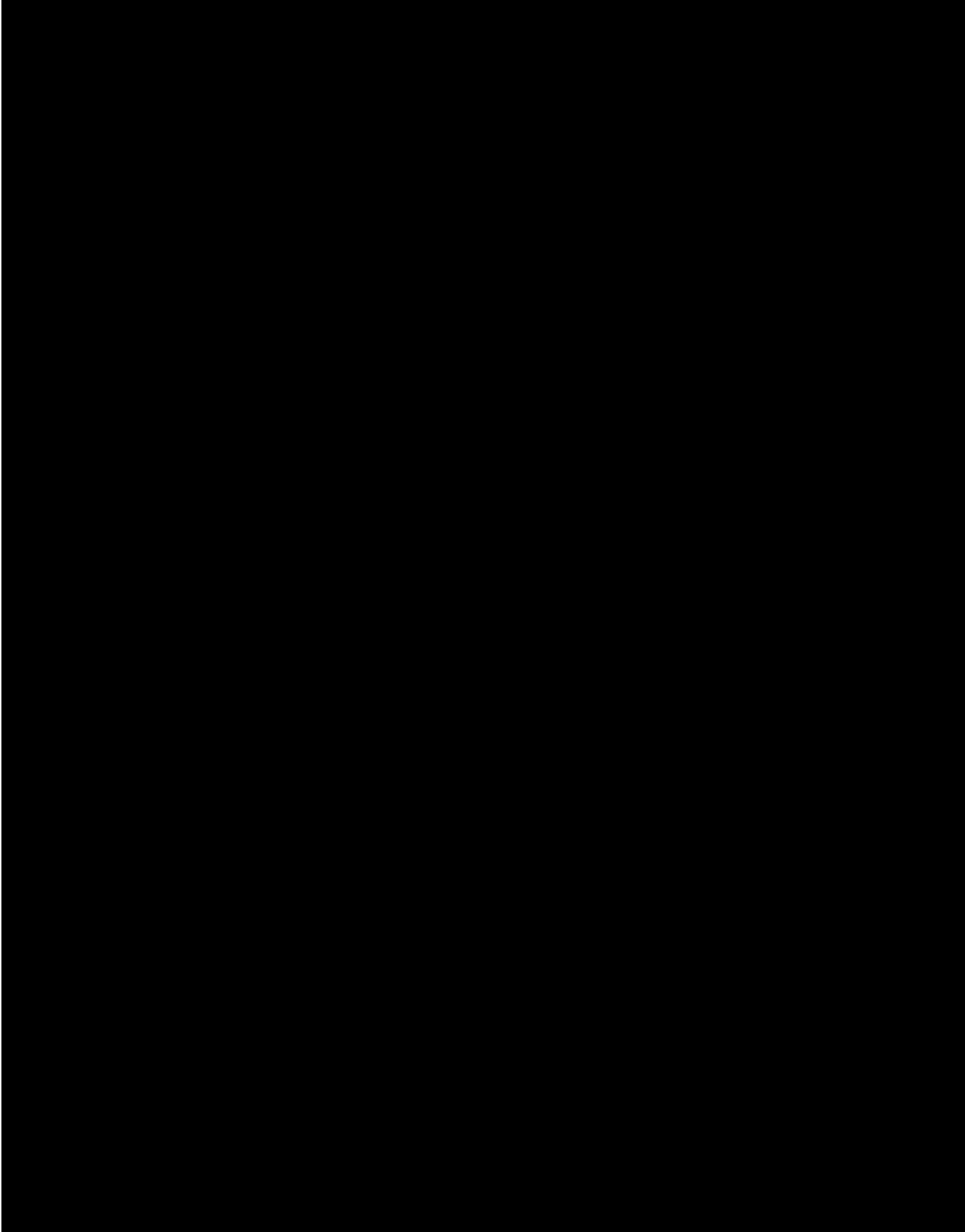
[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY



HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

151. Additional witness testimony shows this as well. For example, Mr. Trivedi testified that [REDACTED]

[REDACTED]

[REDACTED]

Mr. Trivedi further testified that [REDACTED]

[REDACTED] Martin

Weidmann similarly testified that [REDACTED]

[REDACTED]

[REDACTED]

152. In my experience, technical deliverables being provided through one channel and by one deliverables team and support being provided through a different channel and by a different, support team is fairly common. Thus, Arm’s approach of having the UK-based ATG team provide a centralized delivery of what I would consider technical deliverables (e.g., the Arm ARM and the ACK), and further having the India-based ACK support team provide technical support materials (e.g., OOBs and ACK patches) through a different and partner-specific platform is consistent with my experience.

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

X. THE CPU CORE DESIGN VERIFICATION PROCESS

153. Before a chip designer incorporates a custom CPU core design into a SoC for use with a product on the market, it is standard practice that the chip designer verifies that its CPU core design is compliant with the architecture. This architecture compliance verification process is a common practice that is generally followed throughout the industry.

154. I have completed the design process for CPU cores built on various architectures, including MIPS Corporation ISAs, Texas Instruments ISAs, and other academic open source frameworks for CPU ISA simulation and modeling. To complete these designs, often times tests were created from scratch or adopted from legacy tests suites targeting prior iterations of the architecture. Tests would be crafted to exercise portions of the CPU and confirm compliance with the ISA as documented in the ISA specification. This may be for the design of proprietary closed source ISAs, or in some cases when designing models of publicly available ISA definitions. ARM’s provision of the ACK to its ALA partners provides an off the shelf solution that CPU designers can easily and readily leverage to bring their verification process online while tightly integrating with their particular CPU implementation.

155. Arm provides tools and support⁸⁵ to assist an ALA partner with verification of custom CPU core designs. I explain this process, and describe these tools and support, in more detail below.

156. The Arm-Qualcomm ALA contains a [REDACTED] provision. Specifically, [REDACTED] of the Arm-Qualcomm ALA, titled [REDACTED] states:

[REDACTED]

⁸⁵ I understand that [REDACTED] of the Arm-Qualcomm ALA is directed to [REDACTED] ARM_00055357 at -369–372. I offer no opinions regarding whether Arm was obligated to provide any of the allegedly withheld support materials under [REDACTED]

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

[REDACTED]

ARM_00055357 at -367.

157. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

158. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

A. The Architecture Compliance Kit

159. As noted above, the verification process described in the Arm-Qualcomm ALA involves the partner (in this case, Qualcomm) running the Architecture Compliance Suite (ACS) of tests that are part of the Architecture Compliance Kit (ACK).

160. The ACK may be used to help verify the compliance of a partner’s custom CPU core design with the Arm architecture. Grisenthwaite Dep. Tr. at 131:14–22. Different major versions of the Arm architecture (*e.g.*, v8 and v9) have a corresponding major version of the ACK.

[REDACTED]

[REDACTED]

[REDACTED]

ARM_00063298 at -299.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] QCARM_0343954 at -956. Like the other [REDACTED] [REDACTED] of the v8 (ARM_00063298 at -299–300) and v9 (QCARM_0343954 at -955–957) Annex 1s to the ALA, Arm delivers the v8 ACK and v9 ACK to all ALA partners, including Qualcomm, through a centralized database called Product Delivery Hub (PDH).⁸⁶ Weidmann Dep. Tr. at 19:16–20:10, 85:19–86:9, 149:17–150:4. Martin Weidmann, who is part of the Arm Technology Group (ATG group) and is located in the UK, is typically the Arm employee responsible for this. Weidmann Dep. Tr. at 18:11–19:6.

⁸⁶ PDH was formerly known as “Arm Connect.” Weidmann Dep. Tr. at 20:11–21:13.

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

161. The Architecture Compliance Suites (ACS), which is sometimes referred to as the Architecture Validation Suites (AVS), is a suite of tens of thousands of tests called ACK tests. Grisenthwaite Dep. Tr. at 132:7–13, 133:9–13. These “self-checking tests” correspond to various “features of the [Arm] architecture” and are used to test whether a particular implemented feature in a partner’s custom CPU core is Arm architecture compliant. QCVARM_1072199 at -217; QCVARM_1090346 at -366; *see also* Grisenthwaite Dep. Tr. at 132:14–18; *see also* QCVARM_1072199 at -217; QCVARM_1090346 at -366. Running an ACK test generates three possible results: pass, fail, or skip. Trivedi Dep. Tr. at 72:25–73:5; Bhattacharya Dep. Tr. at 31:20–32:7, 43:6–10; George Dep. Tr. at 20:23–21:19.

162. If the test result is a pass, the partner’s implementation of a particular feature is compliant with the Arm architecture. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] When an issue with the ACK test itself is identified, Arm’s practice is to

[REDACTED]

[REDACTED]

[REDACTED]

163. Arm makes the Architecture Envelope Model (AEM) available for download with the ACK. Weidmann Dep. Tr. at 149:17–150:4, 152:24–153:6. Arm Architecture Envelope Models FVPs are fixed configuration virtual platforms, comprising the ARMv8-A, ARMv9-A and

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

ARMv8-R architectures.⁸⁷ They are used for various aspects of compliance testing of the architecture. As Arm has stated, “The Arm Architecture is the guarantee of software portability,” ARMQC_02727610 at -616, and the AEM can be used by an Arm partner to run various ACK software tests on both their own design as well as the AEM to compare that the results of both designs are the same. The AEM is a model that provides the expected results for a given ACK test, and assists partners in validating the results of their implementation. Weidmann Dep. Tr. at 83:6–24.

164. In my experience, other ISA developers did not provide similar tools or tests when I was verifying compliance with other architectures, such as MIPS Corporation ISAs, Texas Instruments ISAs, or other academic open source frameworks for CPU ISA simulation and modeling. Also, when open source releasing simulation models for SoC designs including programmable and extensible CPU ISAs and related build tools, we did not provide tools and tests for verifying compliance. Instead, my team and I developed our own compliance tests from scratch, which we ran to assess architectural compliance and verify the core designs. In some cases, if silicon or simulation technology was available for a given design, that could also be used as part of the verification process in checking the flow of execution and results of the processor state when running various instructions.

XI. THE MATERIALS AND SUPPORT THAT QUALCOMM CONTENDS ARM WITHHELD WERE NOT NECESSARY FOR QUALCOMM TO COMPLETE THE VERIFICATION PROCESS

165. In my opinion, from a technical perspective, the limited materials and support that Qualcomm contends Arm withheld were not necessary for Qualcomm to assess compliance with

⁸⁷

<https://developer.arm.com/Tools%20and%20Software/Fixed%20Virtual%20Platforms/Arm%20Architecture%20FVPs>

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

Arm’s architecture as a technical matter.⁸⁸ Based on my industry experience and understanding, these support materials are not what I would consider to be deliverables from a technical perspective. Instead, they are partner-specific support materials that provide extra, but not necessary, assistance to specific partners during the verification process for a particular core.

166. I understand that Qualcomm alleges Arm withheld OOB packages, ACK patches, and ETE checker support for Qualcomm’s Nuvia-based CPUs. SAC ¶¶ 173–180; Qualcomm’s 3rd Suppl. R&O’s to Arm’s 1st Set of ROGs; Qualcomm’s 2nd Suppl. R&O’s to Arm’s 2nd Set of ROGs; Qualcomm’s 1st Suppl. R&O’s to Arm’s 3rd Set of ROGs. I also understand that, in response to Arm’s Interrogatories seeking Qualcomm’s basis for alleging Arm breached the Arm-Qualcomm ALA by withholding OOB packages or ACK patches, and Qualcomm’s basis for alleging that it was harmed as a result of Arm’s alleged withholding, Qualcomm has not identified any specific OOB packages or ACK patches it contends it was entitled to receive, but that Arm did not provide. *See* SAC; Qualcomm’s 3rd Suppl. R&O’s to Arm’s 1st Set of ROGs; Qualcomm’s 2nd Suppl. R&O’s to Arm’s 2nd Set of ROGs; Qualcomm’s 1st Suppl. R&O’s to Arm’s 3rd Set of ROGs.

167. Qualcomm’s experts, Mr. Posner and Dr. Kennedy, have offered opinions regarding these allegedly withheld materials. For example, Mr. Posner opines:

Arm failed to provide certain technology related to verifying compliance with the Arm ISA. Arm withheld sets of reference reports, known as the “OOB,” providing the specific compliance tests needed by Qualcomm to verify compliance, as well as information on expected test failures that are also used in the verification process. Arm has also withheld replacement tests, known as “ACK patches,” that fix defective tests used in the compliance testing process. Arm’s failure to provide deliverables, even if remedied, shows that Arm is committed to finding ways of

⁸⁸ I have not been asked to opine on, nor do I offer any opinions regarding whether Qualcomm has satisfied its [REDACTED] under Section [REDACTED] of the Arm-Qualcomm ALA.

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

underperforming its contract, and in so doing degrading Qualcomm’s ability to commercialize Arm-compliant products. Finally, Arm’s failure to cure and related actions indicate that Arm may be acting in bad faith.

Posner Rpt. ¶ 65 (internal footnotes omitted) (citing SAC ¶¶ 78-80, 81-101; ARM_01241585; QCARM_7484477; ARM_01241565; ARM_01241577; QCARM_7484481; QCARM_7477120; QCARM_7484471; ARM_01241285; Trivedi Dep. Tr. at 89:11-100:7).

168. Dr. Kennedy opines:

I understand that Qualcomm claims that Arm breached Section [REDACTED] of the Qualcomm ALA because Arm failed to deliver to Qualcomm certain items that Qualcomm alleges constitute Arm Technology, including Architecture Compliance Kit (“ACK”) patches and the OOB (which I understand stands for “out of box”). I understand that the OOB contains a list of ACK tests that enables a licensee to understand which tests it should run on its CPU to avoid generating incomprehensible failures for inapplicable tests. I understand further that the OOB also contains a failure analysis that identifies the cause of test failures and details whether a failure is attributable to an issue within Arm’s environment (“AEM,” also referred to as Arm reference model) or a defect in the ACK test itself. Qualcomm claims that Arm’s failure to provide both the ACK patches and OOB resulted in extra effort that Qualcomm personnel had to spend above and beyond the normal course of operations.

Kennedy Rpt. ¶ 32 (internal footnotes omitted) (citing Trivedi Dep. Tr. at 18, 98–100, 157, 175, 177, 195; Golden Dep. Tr. at 89–91; SAC at 29, 32, 33; Plaintiffs’ Supplemental Responses and Objections to Defendant’s First Set of Interrogatories (nos. 1-9), July 11, 2025, at 8).

169. For the reasons set forth in this Report, I disagree with Mr. Posner and Dr. Kennedy, and I disagree with their technical assumptions.

170. During his deposition, Qualcomm’s corporate representative regarding Arm’s alleged withholding of ALA materials from Qualcomm and regarding Qualcomm’s alleged resulting harm, Jignesh Trivedi testified that [REDACTED]

[REDACTED]

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

171. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] Mr. Trivedi testified that [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

172. In my opinion, OOB packages, ACK patches, and ETE checker support are technical support provided in response to a particular partner’s request, rather than technical deliverables made available to all licensees.

A. OOB Packages

173. I understand that, in response to Arm’s Interrogatories seeking Qualcomm’s basis for alleging Arm breached the Arm-Qualcomm ALA by withholding OOBs, and Qualcomm’s

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

basis for alleging that it was harmed as a result of Arm’s alleged withholding, [REDACTED]

[REDACTED]

See SAC; Qualcomm’s 3rd Suppl. R&O’s to Arm’s 1st Set of ROGs; Qualcomm’s 2nd Suppl. R&O’s to Arm’s 2nd Set of ROGs; Qualcomm’s 1st Suppl. R&O’s to Arm’s 3rd Set of ROGs. Mr. Trivedi testified that [REDACTED]

[REDACTED]

[REDACTED]

174. I understand that Arm did not provide OOB packages for the [REDACTED] CPUs because Arm believed that they incorporated unlicensed code developed by Nuvia prior to the Qualcomm acquisition. *See* Arm’s 1st Supp. Resp. to Qualcomm’s 1st Set of Interrogs. (Nos. 1–3) (July 11, 2025) at 9–10 (No. 1); *see also* ARM_01314327. As I explain in Section XIII below, the evidence supports Arm’s determination that these CPUs are Nuvia-based. *See* § XIII.

1. Contents Of An OOB Package

175. An OOB package is a partner-specific and CPU core design-specific support material that, upon request, Arm may generate for an ALA partner during the CPU verification process. *See, e.g.*, Arm’s 1st Suppl. R&O’s to Qualcomm’s 1st Set of ROGs at 13; Weidmann Dep. Tr. at 86:23–87:13; Bhattacharya Dep. Tr. at 150:14–18; Trivedi Dep. Tr. at 101:23–102:6. I have reviewed an exemplary OOB package, which contains two main components: a reference list of ACK tests and a set of test results from running the listed ACK tests on a reference model called the Architecture Envelope Model (AEM).⁸⁹ Trivedi Dep. Tr. at 99:3–100:7; Grisenthwaite Dep.

⁸⁹ Arm provides the AEM to ALA partners, including QC, as part of the ACK. Weidmann Dep. Tr. at 150:2–4. Qualcomm does not contend that Arm withheld the AEM.

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

Tr. at 135:9–22; QCVARM_0717964; QCVARM_1042776; QCVARM_1042773; QCVARM_1042780; QCVARM_1042777.

176. As noted above, the ACK contains tens of thousands of pass-fail-skip tests that test CPU core compliance for various architectural features. *See* § X.A. However, custom CPU cores do not necessarily implement every feature that the Arm architecture enables. An ALA partner may ask Arm to generate a “reference list” that identifies the selection of ACK tests that are relevant to the specific features of that partner’s CPU core design. Weidmann Dep. Tr. at 81:10–15; Grisenthwaite Dep. Tr. at 137:19–138:7. Partners provide Arm with a target configuration (targetconfig) file to generate the reference list. Trivedi Dep. Tr. at 32:15–33:14, 99:17–21. In this targetconfig file, the ALA partner identifies the features that the partner’s CPU core is implementing. *Id.* Once Arm receives the targetconfig file, [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

177. As I explain in more detail below, ALA partners, like Qualcomm, can similarly create their own reference list. [REDACTED]

[REDACTED]

[REDACTED]

178. The second main component of the OOB package is a list of test results that are automatically generated when Arm runs the partner-specific, CPU-core-specific OOB reference

⁹⁰ Conversation with Vivek Agrawal.

⁹¹ *Id.*

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

list on the AEM. Grisenthwaite Dep. Tr. at 135:9–22. The AEM is a reference “model that embodies the correct behaviors of an implementation.” Grisenthwaite Dep. Tr. at 135:4–8. Arm runs the reference list on the AEM “to help [Arm] check that [Arm] got that selection list correct.” *Id.* at 135:9–22. As I explained above, in doing so, an ALA partner can observe unintended differences in the results of their own design versus the reference behavior of the AEM. These ALA partners can then correct their design in terms of the desired behavior. *See* § X.A. The AEM test results may help identify ACK tests that failed because of an issue with the AEM or a test defect. Trivedi Dep. Tr. at 99:3–13; QCVARM_1042777; QCVARM_1042780. Together, the OOB reference list and the OOB test result list comprise an OOB package, which the ALA partner can use to cross reference its own internally generated reference list of relevant ACK tests and AEM test results.

179. The OOB package may also contain the targetconfig file provided by the partner, and may contain a “failure_analysis.txt” file that is an “[e]xplanation of known ACK failures on AEM.” QCVARM_0717964. Along with the OOB package, Arm may also provide additional “documentation” that has already been made available to the partner as part of the ACK user guide, which Arm makes available to partners regardless of whether they request an OOB package or not. Agrawal Dep. Tr. at 30:20–37:20. For example, Arm may provide a “README” file (QCVARM_1042776) and a “quick_start” file (QCVARM_1042773). QCVARM_0717964. The “README” file identifies the “contents of OoB,” QCVARM_0717964; QCVARM_1042776. The “quick_start” file provides support by assisting partners with step-by-step instructions to guide them through how to use ACK technology that Arm previously delivered by providing “the list of steps to setup, build and run the ACK Kit on ARM’s AEM model ... in Out-of-Box environment,” QCVARM_1042773.

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

180. Arm’s UK-based ATG group provides [REDACTED] Section [REDACTED] of the v8 (ARM_00063298 at -299–300) and v9 (QCARM_0343954 at -955–957) ALA Annex 1s to the ALA to all ALA partners through a centralized database called Product Delivery Hub (PDH).⁹² Weidmann Dep. Tr. at 18:11–19:6, 19:16–20:10. By contrast, Arm’s India-based ACK support team provides OOB packages to specific ALA partners through a partner-specific portal called Causeway.⁹³ Agrawal Dep. Tr. at 57:17–24; Weidmann Dep. Tr. at 158:13–20; Trivedi Dep. Tr. at 111:23–112:2; QCARM_3216178; QCVARM_0717964.

2. OOB Packages Are Support Materials And Are Not Necessary For The Architecture Verification Process

181. In my opinion, and from a technical perspective, Arm’s OOB packages are support materials and not required for a partner to verify that their design complies with the Arm architecture. Instead, OOB packages, which are sent by Arm’s India-based ACK support team through Causeway, provide support that assists a partner with using the ACK verification technology that Arm’s UK-based ATG team previously delivered to the partner through PDH.

182. In my experience, verification can proceed without the equivalent of an OOB package. An OOB package is a support material that may aid, or provide an off-the-shelf compliance testing framework, but is by no means required for compliance testing of a CPU design. For example, on multiple occasions in my career, bit-true, cycle accurate implementations of various microprocessor ISA implementations were achieved without the use of an OOB package or similar supporting technology. By taking the publicly disclosed ISA definition, and a reference CPU implementation either in silicon, or with vendor simulation technology, an implementation

⁹² PDH was formerly known as “Arm Connect.” Weidmann Dep. Tr. at 20:11–21:13.

⁹³ Causeway was formerly known as “DropZone.” Weidmann Dep. Tr. at 158:13–20

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

of the microprocessor was created, tested, and shown to be accurate in terms of binary compute and timing. This new implementation of said microprocessor ISA was used to execute existing, pre-compiled binary executables that were targeted to the initial reference silicon and/or simulator and shown to run correctly in terms of computation and timing.

183. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

184. This testimony is consistent with my understanding and experience. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] These companies are able to reference the Arm architecture, the ACK, and complete the verification process as a technical matter on their own. They have access to Arm’s entire suite of ACK tests, which Arm updates every quarter, and they are more than capable of identifying which ACK tests are relevant to the particular features used by their CPU core designs.

185. As another example, consider the case in which an engineer wishes to test architecture compliance for a 32-bit arithmetic ADD operation. One way to structure this test would be to initialize various arithmetic operations to be run, such as setting up vectors of input

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

operands to be computed on. The test would also contain a results vector that stores the expected results of the various ADD operations performed over the input vectors. Once the compliance test is Compiled, Assembled (and possibly Linked if external libraries are used), it would be run on the existing implementation of the target machine. As the various ADD operations are executed over the input vectors, the result of each ADD operation could be stored in a dedicated CPU register and compared against the reference results vector via a compare instruction. If the results match, then that particular ADD instruction’s execution was correct for those particular input operands. If instead, the comparison instruction did not show identical values in the result register and that of the test vector, that particular execution of the ADD instruction would be deemed as incorrect. The engineer could then inspect the resultant value produced by that particular execution of the ADD instruction, with those particular input operands, and begin to analyze the cause of the error. This is very much in line with my own personal experience in creating various types of unit tests relating to microprocessor design. In this example, the engineer would not need to be told whether or not it should run this test. If the engineer designed their CPU using a 32-bit arithmetic ADD operation, the engineer would know that a test regarding the 32-bit arithmetic ADD operation would be relevant and should be run to verify compliance with the architecture. On the other hand, if the engineer did not design their CPU to use a 32-bit arithmetic ADD operation, the engineer could safely conclude that running a corresponding verification test would not be necessary.

186. Qualcomm is an example of this. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

187. Further, Qualcomm is capable of generating, and in fact does generate its own “OOB packages” as part of its normal practice. Jignesh Trivedi, Qualcomm’s corporate representative on several OOB-related topics, testified that [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] I have seen Qualcomm [REDACTED]” which Mr. Trivedi testified are [REDACTED]

[REDACTED] [REDACTED] [REDACTED] [REDACTED]

[REDACTED]

188. Mr. Trivedi further testified that [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] Qualcomm’s use of Arm’s OOB as a check to determine whether it correctly generated its own OOB is further evidence that OOBs are partner-specific support materials that assist a partner in using Arm’s architecture verification deliverables for a particular CPU configuration.

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

189. I have also seen evidence that, within a day of learning that Arm would not provide an OOB package for Qualcomm’s Nuvia-based [REDACTED] CPU, Mr. Trivedi ensured his superiors that [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] Mr. Trivedi also testified that [REDACTED]

[REDACTED]

[REDACTED]

190. Accordingly, in my opinion, the reference list component of Arm’s OOB package is not required to complete the verification process, and is instead a partner-specific support material that assists a partner in using Arm’s architecture verification deliverables for a particular CPU configuration. I have seen no evidence to the contrary. Instead, Qualcomm can and does generate an OOB reference list on its own, and simply uses Arm’s list as a “cross-reference,” which is consistent with my personal experience and knowledge of the architectural verification process as a technical matter.

191. With respect to the second component of the OOB package, in my opinion, Qualcomm can also generate its own AEM test result list without significant extra effort. As I described above, the AEM is a reference model that is available for download with the ACK. Weidmann Dep. Tr. at 150:2–4. Arm made the v8 and v9 ACKs—including each quarterly v8 and v9 ACK release—available for download on PDH. [REDACTED]

[REDACTED]

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

[REDACTED]

I am not aware of Qualcomm contending that it has not received the AEM.

192. Thus, in my opinion, Qualcomm has everything it needs to generate its own AEM result list without significant extra effort. Qualcomm could simply take its internally generated OOB reference list, apply it to the AEM that Arm delivered, and generate an AEM test result list. Arm’s corporate representative, Martin Weidmann, testified that [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

193. As I noted above, Arm may also provide a “failure_analysis.txt” file that is an “[e]xplanation of known ACK failures on AEM” along with an OOB package. QCVARM_0717964. Mr. Trivedi testified that [REDACTED]

[REDACTED]

[REDACTED] However, a “failure_analysis.txt” file is “shipped with the

⁹⁴ Product code [REDACTED] corresponds to the v8 ACK. ARM_00063298 at -299; Weidmann Dep. Tr. at 169:8–20.

⁹⁵ Product code [REDACTED] corresponds to the v8 ACK. Weidmann Dep. Tr. at 169:8–20.

⁹⁶ Product code [REDACTED] corresponds to the v9 ACK. QCARM_0343954 at -956; Weidmann Dep. Tr. at 166:8–13.

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

ACK.” QCVARM_0689117. Mr. Agrawal testified that [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] Mr. Agrawal further testified that [REDACTED]

[REDACTED]

[REDACTED]

This shows that Arm provided Qualcomm, [REDACTED], with information about AEM failures and limitations, which Qualcomm could have referenced in analyzing its own ACK test results.

194. Accordingly, in my opinion, Arm’s OOB AEM test result list is also not required to complete the verification process. Instead, the evidence shows that Qualcomm can generate an AEM test result list on its own without significant extra effort. The evidence also shows that Qualcomm already had access to a list of known AEM limitations and issues, which further indicates that Arm’s OOB AEM test result list is not required. This, too, is consistent with my personal experience and knowledge of the architectural verification process.

195. I also note that Qualcomm could have completed the verification process for each of its Nuvia-based CPUs by running the full suite of ACK tests against each configuration. There are three possible ACK test results: pass, fail, or skip. Trivedi Dep. Tr. at 73:3–9; George Dep. Tr. at 20:23–21:19. Test skips occur when a test does not correspond to any feature that is present in a partner’s CPU. Bhattacharya Dep. Tr. at 43:6–10; George Dep. Tr. at 20:23–21:19. Thus, had Qualcomm run the entire ACK suite against their Nuvia-based CPUs, any irrelevant test would have simply shown up as a skip on the test report, and Qualcomm could have disregarded those results. *Id.* Running the full suite of ACK tests would have required little additional computing

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

power and time. For example, I have seen evidence showing that [REDACTED]

[REDACTED]

[REDACTED] QCVARM_0602258. I have also seen evidence showing that

[REDACTED]

[REDACTED] QCVARM_0602295. This is a minimal amount of testing time, in my experience.

An OOB reference list—whether created by Arm or by Qualcomm—would not be necessary for this process.

196. I have seen additional evidence that supports my opinion. Documents and testimony show that Arm and Qualcomm [REDACTED]

[REDACTED]

[REDACTED] QCARM_3216178. In the same email chain, Mr. Agrawal explains that [REDACTED]

[REDACTED] *Id.* at -184; *see also* [REDACTED]

[REDACTED]

[REDACTED] Mr. Agrawal also notes that [REDACTED]

[REDACTED] *Id.*

197. As another example, in a 2022 email chain between Mr. Agrawal and Mr. Trivedi,

[REDACTED]

QCARM_3066477. Including Arm’s support email on communications is one of the ways

[REDACTED]

[REDACTED]

[REDACTED] In the same email chain, Mr. Trivedi [REDACTED]

[REDACTED]

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

[REDACTED]

[REDACTED]).

198. In contrast, I have seen evidence that Arm communications regarding the delivery of the ACK itself are sent from a different Arm email. *See, e.g.*, QCVARM_0613083 at -083–084

([REDACTED]

[REDACTED]

[REDACTED]).

199. As another example, Mr. Agrawal sends [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED]

[REDACTED] [REDACTED] [REDACTED] [REDACTED]

[REDACTED]

200. Further, Mr. Trivedi’s testimony consistently associated Mr. Agrawal and OOB packages with support. For example, Mr Trivedi agreed that [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

201. As another example, [REDACTED]

[REDACTED]

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

Additional testimony from Mr. Trivedi bolsters my opinion. *See, e.g.*, 10/25/2023 Trivedi Dep. Tr. at 46:3–5 (“Q. Who on the Arm side was working to **support** NuVia in this effort? A. It was Vivek Agrawal”).

202. Arm witnesses have also consistently testified that [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

203. Accordingly, in my opinion, Arm’s OOB packages are support materials, are not required to run the ACK, and are not required to complete the architecture verification process. Further, in my opinion, Qualcomm is capable of generating the two main components of the OOB package (and in fact did generate those components) on its own. Regardless, Qualcomm could have completed the verification process by running the full suite of ACK tests against their custom CPUs with minimal additional computing effort. My opinion is further supported by evidence showing that both Arm and Qualcomm considered OOB packages to be support materials.

B. ACK Patches

204. I understand that, in response to Arm’s Interrogatories seeking Qualcomm’s basis for alleging Arm breached the Arm-Qualcomm ALA by withholding ACK patches, and Qualcomm’s basis for alleging that it was harmed as a result of Arm’s alleged withholding, Qualcomm has not identified any specific ACK patches it contends it was entitled to receive, but that Arm did not provide. *See* SAC; Qualcomm’s 3rd Suppl. R&O’s to Arm’s 1st Set of ROGs; Qualcomm’s 2nd Suppl. R&O’s to Arm’s 2nd Set of ROGs; Qualcomm’s 1st Suppl. R&O’s to Arm’s 3rd Set of ROGs. Mr. Trivedi testified that [REDACTED]

[REDACTED]

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

However, Mr. Trivedi

However, Mr. Trivedi estimated that

205. I understand that Arm did not provide interim ACK patches for the CPU cores because Arm determined that they are derived from what Arm believed to be unlicensed Nuvia developments. *See* Arm’s 1st Supp. Resp. to Qualcomm’s 1st Set of Interrogs. (Nos. 1–3) (July 11, 2025) at 9–10 (No. 1); *see also* ARM_01314327. However, as I explain further below in this Report, Arm *did* still provide Qualcomm with the fixes to ACK test issues that were identified by incorporating the fixes into the next quarterly ACK release that Arm made available to all ALA partners, including Qualcomm. As I explain in Section XIII below, the evidence supports Arm’s determination that these CPUs are Nuvia-based. *See* § XIII.

1. ACK Patches Generally

206. As I previously explained, the ACK includes a suite of tens of thousands of pass-fail-skip tests that test architectural compliance for various CPU features. *See* § X.A. Occasionally, issues arise with one or more ACK tests that should be fixed. Arm’s practice is to

⁹⁷ As I discuss in Section XII.A.2, below. I have seen evidence suggesting this figure likely overestimates the number of actual ACK test issues that occurred during this time.

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

207. I have seen evidence that, during the relevant period,⁹⁸ Qualcomm had access to the v8 and v9 ACK, including each quarterly v8 and v9 ACK release, via PDH.⁹⁹ [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] I am not aware of Qualcomm contending otherwise.

208. [REDACTED]

[REDACTED]

[REDACTED] The fixes that are incorporated

⁹⁸ I understand that Qualcomm contends that the alleged withholding period is from May 2022, when Qualcomm contends Arm allegedly began withholding materials from Qualcomm, through January 8, 2025, which is the date that Arm sent a letter to Qualcomm stating that [REDACTED] pending certain litigation between the parties. *See* Qualcomm’s Second Supplemental Responses and Objections to Arm’s Second Set of Interrogatories (Nos. 10-13), July 11, 2025 at 22 (Qualcomm Response to Interrogatory No. 13); Arm’s First Supplemental Responses and Objections to Qualcomm’s First Set of Interrogatories (Nos. 1-3), July 11, 2025 at 10–11 (Arm Response to Interrogatory No. 1).

⁹⁹ PDH was formerly known as “Arm Connect.” Weidmann Dep. Tr. at 20:11–21:13.

¹⁰⁰ [REDACTED]

[REDACTED]

[REDACTED]

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

into the quarterly ACK releases are provided to all ALA partners via PDH.¹⁰³ Weidmann Dep. Tr. at 90:6–17. [REDACTED]

[REDACTED] Unlike those materials, Arm provides ACK patches [REDACTED] Weidmann Dep. Tr. at 90:18–91:5; Trivedi Dep. Tr. at 112:3–6. [REDACTED]

[REDACTED] Weidmann Dep. Tr. at 18:11–19:6. Unlike those materials, ACK patches are generally provided by Arm’s India-based support team via Causeway. Agrawal Dep. Tr. at 11:7–11, 158:18–159:14; 12/14/2023 Agrawal Dep. Tr. at 14:16–15:4; QCARM_3216178.

209. In my opinion, ACK patches are not new or additional ACK tests. Instead, they are interim corrections to existing tests. Bhattacharya Dep. Tr. at 46:4–9. But they do not create new tests. This is consistent with my understanding. At a number of points in my career I have worked with various types of unit tests and compliance tests. Oftentimes, when creating a new test for a new piece of functionality, an existing test was copied and altered to support the functionality. This then allowed the newly copied test to be quickly integrated with the test harness and environment, outputting results in a manner identical to similar existing tests (such as self-testing), with a minimal amount of software engineering effort. Creating a new test for new functionality, however, is different from correcting an error in an existing verification test. ACK patches are not new or additional tests; they are corrections to errors in existing tests, and as I explained above,

¹⁰³ PDH was formerly known as “Arm Connect.” Weidmann Dep. Tr. at 20:11–21:13.

¹⁰⁴ Causeway was formerly known as “DropZone.” Weidmann Dep. Tr. at 158:13–20

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

Arm includes these corrections in the quarterly ACK release that Arm provides to all ALA partners through PDH.

2. ACK Patches Are Support Materials And Are Not Necessary For The Architecture Verification Process

210. In my opinion, and from a technical perspective, ACK patches are support materials and not required for a partner to verify that their design complies with the Arm architecture as a technical matter. Instead, ACK patches, which Arm’s India-based ACK support team sometimes provides to particular partners as a curtesy by through Causeway, provide an interim solution to an ACK test fix that Arm provides to all partners through quarterly ACK releases sent by Arm’s UK-based ATG team through PDH.

211. As noted above, Arm generally incorporates ACK test fixes for each verified ACK test issue into subsequent quarterly ACK releases. Weidmann Dep. Tr. at 90:6–17; Bhattacharya Dep. Tr. at 50:13–18. During the period of Arm’s alleged withholding, Arm continued to

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

212. Further, Qualcomm had access to each quarterly ACK release, which Qualcomm does not dispute. *Id.*; ARMQC_02604616; ARMQC_02779171; ARMQC_02779176; ARMQC_02779181. Accordingly, in my opinion, the delivery of an interim, courtesy ACK patch

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

was not required as a technical matter—Qualcomm had access to each ACK test fix for its legitimate ACK test issues in the subsequent quarterly ACK releases, which Qualcomm received at the same time as Arm’s other ALA partners.

213. I understand that Qualcomm contends it could not utilize the fixes in the quarterly ACK releases because [REDACTED]

[REDACTED] Trivedi Dep.

Tr. at 94:15–97:22. I understand that Qualcomm also contends [REDACTED]

[REDACTED] *Id.* at 96:7–97:22.

I disagree.

214. In my opinion, Qualcomm could have moved from one quarterly release of the ACK to the next with minimal effort. To start, Mr. Trivedi admits that [REDACTED]

[REDACTED] *Id.* In fact, Mr. Weidmann testified that [REDACTED]

[REDACTED]

[REDACTED]

215. Further, as I noted above, Qualcomm is a sophisticated company with a team of engineers working on the verification process. Qualcomm is more than capable of quickly transitioning from one quarterly release of the ACK to the next. I have seen evidence showing that Qualcomm was able to run ACK tests quickly. For example, I have seen evidence showing that [REDACTED]

[REDACTED] QCVARM_0602258. I have also seen evidence showing that [REDACTED]

[REDACTED] QCVARM_0602295. This is a minimal amount of testing time, in my experience.

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

216. Moreover, in my experience, transitioning from one release of an ACK or similar compliance or testing framework to a newly updated version is merely an exercise in downloading and installing the new release, and re-running the compliance suite. For example, to update to the latest software release, one would typically either download from a website, or use various version management tools such as Git, Subversion, CVS etc., to download the latest compliance or test suite. Once downloaded, a user would either manually copy the compliance tests and tools to the appropriate directory, or use an installer program that comes with the update to automatically install on the target machine.

217. Oftentimes, this is one of the first few tasks an engineer performs when starting a new position within a company, or if getting a new work machine that must be set up from scratch. In my experience, such compliance tests and tools often come with installation documentation in the form of a README.txt file or similar instructions. In the case of tests and tools that my team and I may have created ourselves, documentation was created and often times put in an internal corporate Wiki type solution where other engineers could access it to install and update their compliance tests as needed. In either case, the entire process could be performed by a junior engineer, and may only take at most a couple of hours often while the engineer could be working on other tasks in parallel.

218. Further, Arm’s quarterly ACK releases included the fixes for the ACK test issues that were identified during that quarter, including for any ACK test issues that Qualcomm identified. Weidmann Dep. Tr. at 122:8–123:2. Accordingly, in my opinion, moving to the new ACK release would have been trivial for a sophisticated company like Qualcomm, it would have addressed Qualcomm’s ACK test issue concerns, and it would have further negated any alleged need for an ACK patch.

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

219. Further, in my opinion, even if Qualcomm did not move to a new quarterly release of the ACK, it could have selected only the relevant fixed ACK tests from the latest quarterly ACK release and retroactively applied those fixed tests to the release of the ACK that Qualcomm was using. Arm’s quarterly ACK releases are accompanied by release notes that identify sections of the ACK that have been updated to address ACK test issues. *See, e.g.,* ARMQC_02761714 (exemplary, 45-page Armv9-A Architecture Compliance Kit Release Note); Conversation with Vivek Agrawal. For example, the [REDACTED] includes information that Qualcomm could have used to understand what changes were made in the latest ACK release, including a chapter titled “Release information,” and another chapter titled “Change history,” which documents changes such as “Test updates.” ARMQC_02761714. In my opinion, a sophisticated partner, like Qualcomm, would have been able to use these release notes to confirm their reported ACK test issues had been resolved. Also, in my opinion, Qualcomm would have been able to locate and identify the specific fixed ACK tests. Qualcomm could have then run these specific ACK tests against their CPU core configurations, and assessed CPU core compliance for the features those tests targeted. This would have negated any alleged need for an Arm-provided ACK patch and it further supports my opinion that ACK patches are not required to complete the architecture verification process.

220. Further, Arm continued to provide quarterly ACK releases to [REDACTED] including Qualcomm, during the relevant period, Weidmann Dep. Tr. at 122:8–123:2, and

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

[REDACTED]

[REDACTED]

[REDACTED] In my opinion, this is further evidence that Arm ACK patches are not required for completing the architecture verification process and are instead support materials.

221. [REDACTED]

[REDACTED]

[REDACTED] These companies are able to reference the Arm architecture, the ACK, and the associated user guides and documentation to complete the verification process on their own. They have access to Arm’s entire suite of ACK tests, which Arm updates every quarter.

222. I have seen evidence suggesting that Qualcomm did in fact address what Qualcomm considered to be ACK test issues during the period of Arm’s alleged withholding of ACK patches. For example, Mr. Trivedi estimated that [REDACTED]

[REDACTED]

[REDACTED] As I explain in detail below, in my opinion, this is likely an overestimate. *See* § XII.A.2. Regardless, Mr. Trivedi further testified that, [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

[REDACTED]

[REDACTED]

223. Jeff Golden, a hardware engineer at Qualcomm who was involved in the custom core architectural verification process, testified that [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

224. Mr. Golden also testified that [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] Mr. Golden further testified that [REDACTED]

[REDACTED]

[REDACTED]

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

Mr. Golden testified that

225. This is consistent with my understanding and experience. As I noted above, Qualcomm is a sophisticated company with a team of verification engineers. In my experience, developing compliance-test fixes or otherwise overcoming compliance-test issues is well within the wheelhouse of an architectural verification engineer, and often takes minimal additional effort, as these witnesses testified. For example, numerous times in my career I have generated and run self-made architectural compliance tests. This has included tests that were to be run in isolation, that is outside of any pre-existing framework, as well as those that were to be run within an existing compliance framework. On many occasions this process would entail either writing a piece of source code from scratch, or copying of an existing compliance test and altering the logic and functionality of the test to perform a new compliance test. In most cases, these tests comprised Assembly or low level C programming language code. As I discussed earlier in Section VIII.A.2, in relation to the simple 32-bit *ADD* instruction example, the test was often times comprised of a set of input data vectors, and an output results vector. The results of executing the 32-bit *ADD* instruction over various input operands were compared against the known results vector.

226. In the case of a pre-existing compliance test framework, if I or my engineers wanted to add said test to the full compliance framework, we would either manually enter the new test into the existing set of master tests, or in the case of larger industry compliance testing whereby we had dedicated compliance testing engineers, I would email the source code and results for the test for them to insert into a master compliance test list.

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

227. The evidence suggests that Qualcomm was able to quickly address ACK test issues on their own. This would have negated any alleged need for an interim, Arm-provided ACK patch prior to Arm’s quarterly releases.

228. Arm witnesses have consistently testified that [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

229. As another example, Aparajita Bhattacharya, Arm’s senior director of engineering, testified that [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] In fact, Ms. Bhattacharya testified that [REDACTED]

230. As another example, Mr. Agrawal testified that [REDACTED]

[REDACTED] and Mr. Grisenthwaite testified that [REDACTED]

[REDACTED]

Mr. Grisenthwaite also testified that [REDACTED]

[REDACTED]

[REDACTED] Another Arm verification engineer, Anupa George, testified that [REDACTED]

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

[REDACTED] This is consistent with my understanding and my opinion.

231. I have also seen additional evidence that supports my opinion. Documents and testimony show that Arm and Qualcomm considered ACK patches to be support materials. For example, in a 2020 email between Mr. Agrawal and Mr. Trivedi, [REDACTED]

[REDACTED]
QCARM_3216178. In the same email chain, Mr. Agrawal explains that [REDACTED]

[REDACTED]
[REDACTED]
[REDACTED]

Mr. Agrawal also notes that [REDACTED]
QCARM_3216178 at -184. This is consistent with my opinion and understanding—what Mr. Agrawal’s team provides to ALA partners, including ACK patches, are support; they are not technically necessary for the partner to complete the architecture verification process.

232. In contrast, I have seen evidence that Arm communications regarding the delivery of the ACK itself are sent from a different Arm email. *See, e.g.*, QCVARM_0613083 at -083–084 ([REDACTED]
[REDACTED]
[REDACTED]).

233. As another example, in a 2022 email chain between Mr. Agrawal and Mr. Trivedi, [REDACTED]
QCARM_3066477 at -477–478. [REDACTED]
[REDACTED]

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

[REDACTED]

[REDACTED] In the same email chain, Mr. Trivedi [REDACTED]

[REDACTED] QCARM_3066477; *see also* Trivedi Dep. Tr. at 122:2–14 ([REDACTED]).

234. As another example, Mr. Agrawal sends [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

235. Further, Mr. Trivedi’s testimony consistently characterized what Mr. Agrawal provides, including ACK patches, as support. For example, Mr. Trivedi testified that [REDACTED]

[REDACTED]

[REDACTED] Mr. Trivedi also agreed that [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

236. As another example, [REDACTED]

[REDACTED]

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

Additional testimony from Mr. Trivedi further supports my opinion. *See, e.g.*, 10/25/2023 Trivedi Dep. Tr. at 46:3–5 (“Q. Who on the Arm side was working to *support* NuVia in this effort? A. It was Vivek Agrawal.”).

237. Arm witnesses have also consistently testified that [REDACTED]

[REDACTED]

238. In addition, [REDACTED] of the Arm-Qualcomm ALA is titled [REDACTED]

[REDACTED]

[REDACTED] ARM_00055357 at -369–372. I do not offer any opinions regarding any rights or obligations under the ALA, including whether ACK patches are covered by the [REDACTED]

[REDACTED] Qualcomm’s corporate representative, Mr.

Jonathan Weiser, however, testified that [REDACTED]

[REDACTED]

[REDACTED]

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

[REDACTED]

[REDACTED]

239. Further, Mr. Trivedi testified [REDACTED]

[REDACTED]

240. Qualcomm’s corporate representatives’ testimony that correcting errors to the ACK is a [REDACTED] function further bolsters my opinion that, from a technical

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

perspective, ACK patches are support materials that are not necessary to complete the verification process and are not what I would expect to be a deliverable as a technical matter.

241. Accordingly, in my opinion, ACK patches are support materials. Further, in my opinion, Qualcomm was capable of using subsequent quarterly ACK releases, which incorporated fixes for each Qualcomm-identified ACK test issue, during the architecture verification processes for the Nuvia-based cores. No one forced Qualcomm to use an old version of the ACK for verification—that was Qualcomm’s choice alone. Even if Qualcomm did not move to the most recent quarterly ACK releases, Qualcomm was capable of identifying and selecting the relevant fixed ACK tests from those quarterly ACK releases. Qualcomm could use those specific fixed tests to run additional compliance tests against their configurations. In my opinion, Qualcomm also could have developed their own interim ACK test fixes for ACK test issues (that were resolved with Arm’s provision of the next quarterly ACK release). This is further evidence that, from a technical perspective, ACK patches are optional support materials that Arm may choose to provide as a courtesy. My opinion is further supported by evidence showing that both Arm and Qualcomm considered ACK patches to be support materials.

C. ETE Checker Support

242. I understand that Qualcomm contends Arm withheld support for configuring the Embedded Trace Extension (ETE) checker¹⁰⁵ for the Nuvia-based [REDACTED] CPU cores, starting in May 2024, though it is not clear what support Qualcomm alleges was withheld. Qualcomm’s 3rd Suppl. R&Os to Arm’s 1st Set of ROGs at 13, 18, 47; Qualcomm’s 2nd Suppl. R&O’s to Arm’s 2nd Set of ROGs at 22–23; Qualcomm’s 1st Suppl. R&Os to Arm’s 3rd Set of

¹⁰⁵ The ETE checker is also known as the ETE instruction trace checker. QCARM_0343954 at -956; Golden Dep. Tr. at 38:11–17.

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

ROGs at 24–25; Golden Dep. Tr. at 49:14–50:11; Trivedi Dep. Tr. at 132:14–134:4, 254:22–255:4; QCVARM_0618712. I understand that Qualcomm does not contend that Arm withheld the ETE checker itself, nor does Qualcomm contend that Arm withheld any ACK patches relating to the ETE checker. I have not seen Qualcomm clearly explain whether its Nuvia-based CPU cores implement the ETE trace feature.

243. As I explain below, in my opinion, Arm provided some ETE checker support to Qualcomm and Qualcomm had the materials it needed to configure the ETE checker. However, I also understand that Arm did not provide certain additional ETE checker support for the [REDACTED] CPU cores because Arm determined that they are derived from what Arm believed to be unlicensed Nuvia developments. *See* Arm’s 1st Supp. Resp. to Qualcomm’s 1st Set of Interrogs. (Nos. 1–3) (July 11, 2025) at 9–10 (No. 1); *see also* ARM_01314327. As I explain in Section XIII below, the evidence supports Arm’s determination that these CPUs are Nuvia-based. *See* § XIII.

1. The ETE Trace Function And The ETE Checker

244. The ETE trace function is an optional Arm v9 architecture feature that a partner may choose to implement for their custom CPU cores. Trivedi Dep. Tr. at 142:24–143:4, 143:19–144:2, 144:4–13. The ETE trace feature enables advanced instruction tracing for debugging, performance analysis, and software validation.¹⁰⁶ The Arm v9 ACK, which Arm provided to Qualcomm, contains specific ACK tests that test ETE trace compliance. Trivedi Dep. Tr. at 142:14–22; Golden Dep. Tr. at 57:7–23.

¹⁰⁶ *See* <https://developer.arm.com/documentation/102856/0100/Embedded-Trace-Extension>

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

245. The ETE checker is a verification tool that helps verify that a CPU’s implementation of the ETE trace feature complies with the Arm v9 architecture. Trivedi Dep. Tr. at 142:14–22.

246. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] Like the [REDACTED] [REDACTED] [REDACTED] of the v8 (ARM_00063298 at -299–300) and v9 (QCARM_0343954 at -955–957) ALA Annex 1s to the ALA, Arm made the [REDACTED] available for Qualcomm to download (as part of the v9 ACK) via PDH.¹⁰⁷ Weidmann Dep. Tr. at 90:6–17.

247. I have seen evidence that Qualcomm had access to the v9 ACK, including each quarterly v9 ACK release, via PDH. *Id.*; [REDACTED]

[REDACTED]

[REDACTED] I am not aware of Qualcomm contending it did not receive the quarterly release of the v9 ACK. Qualcomm’s witnesses [REDACTED]

[REDACTED]

[REDACTED] Further, Qualcomm does not contend that Arm withheld ETE trace-specific ACK tests. Golden Dep. Tr. at 57:7–23.

248. The exact ETE checker support Qualcomm contends it did not receive is vague and difficult to interpret. It appears that Qualcomm contends it did not receive [REDACTED] [REDACTED]. I understand that Qualcomm points to an email exchange between Mr.

¹⁰⁷ PDH was formerly known as “Arm Connect.” Weidmann Dep. Tr. at 20:11–21:13.

¹⁰⁸ Product code [REDACTED] corresponds to the v9 ACK. QCARM_0343954 at -956; Weidmann Dep. Tr. at 166:8–13.

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

Agrawal and Mr. Trivedi as evidence of this. QCVARM_0618420. In that email, [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

2. ETE Checker Support, Such As [REDACTED], Is Support And Is Not Necessary For The Architecture Verification Process

249. In my opinion and from a technical perspective, the support that Qualcomm requested from Arm regarding configuring the ETE checker support, such as [REDACTED], is support and is not required to complete the verification process, nor is it required to implement the ETE trace feature. I have seen several pieces of evidence that support my opinion.

250. To start, ETE checker support that Qualcomm requested, as the name implies, is support. I understand that Qualcomm frequently describes it as such. *See, e.g.*, Qualcomm’s 3rd Suppl. R&Os to Arm’s 1st Set of ROGs at 13 (“Qualcomm has also made repeated requests to Arm for *assistance* in configuring the ETE Checker and was not provided with any *support*...”), 47 (“Additionally, Qualcomm made repeated requests to Arm for *assistance* in configuring the ETE Checker and was not provided with any *support*...”), QC’s 2nd Suppl. R&Os to Arm’s 2nd Set of ROGs at 22 (“In addition, Arm refused to provide *support* to allow Qualcomm to configure the

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

ETE Checker, a component of the ACK licensed by Qualcomm for Armv9 ... because Arm refused to provide any *support* for configuring the ETE Checker, Qualcomm could not use it for testing compliance with the ETE feature.”), 23 (noting that Arm failed “to provide *support* for the ETE Checker”); QC’s 1st Suppl. R&Os to Arm’s 3rd Set of ROGs at 24 (“Additionally, Qualcomm made repeated requests to Arm for *assistance* in configuring the ETE Checker and was not provided with any *support* ...”).

251. Qualcomm’s witnesses have also testified that [REDACTED]

[REDACTED]

252. Arm’s witnesses have also consistently described ETE checker support as support.

[REDACTED]

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

253. The above evidence supports my opinion that ETE checker support is support. It is not required to complete the architecture verification process, including because Qualcomm had everything it needed, as I explain below.

254. Qualcomm was able to complete the verification process for its Nuvia-based

[REDACTED] CPU cores without the ETE checker support it alleges Arm withheld.

[REDACTED]

[REDACTED]

[REDACTED]

In my opinion, this is further evidence that Arm ETE checker support is not required for completing the architecture verification process and is instead optional support.

255. As noted above, it is unclear whether Qualcomm released its cores with or without the ETE trace feature enabled. Regardless, in my opinion, Qualcomm had everything it needed to implement the ETE trace feature, and Arm provided ETE checker support to Qualcomm during the relevant period. I explain this in detail below.

256. ETE trace is an optional feature that a partner may choose to implement, but is not required to implement, in its CPU core designs. For example, Mr. Trivedi testified that

[REDACTED]

[REDACTED]

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

[REDACTED] This further supports my opinion that ETE checker support is an optional feature and not needed to complete the architecture verification process. Indeed, implementing the ETE trace function is not even required.

257. I also understand Qualcomm contends that, as a result of Arm’s alleged withholding of ETE checker support, Qualcomm [REDACTED]

[REDACTED]

[REDACTED] However, Qualcomm does not dispute that Arm delivered all ACK tests related to the ETE trace feature, nor does Qualcomm dispute that Arm delivered the ETE checker.

258. In my opinion, Qualcomm had everything it needed to use the ETE checker. As noted above, Qualcomm had access to the v9 ACK (and each subsequent quarterly ACK release), which contained the full suite of ACK tests, including those directed to testing compliance for the ETE trace feature. *See supra* § IX.B.2. Qualcomm also had access to the ETE checker, which is made available for download along with the ACK. *See supra* § IX.B.2. Qualcomm also had access to all ACK-related documentation, including documentation regarding configuring the ETE checker. QCVARM_0618977 at -978; *see, e.g.*, QCVARM_1078822. As I explained, Qualcomm is a sophisticated company with sophisticated verification engineers. Qualcomm is able to reference the Arm architecture, the ACK, and the associated user guides and documentation to complete the verification process—including the ETE checker compliance process—on its own. Mr. Agrawal testified that [REDACTED]

[REDACTED]

[REDACTED]

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

261. I understand that Qualcomm points to an email exchange between Mr. Agrawal and Mr. Trivedi as evidence of Arm allegedly failing to provide ETE checker support. QCVARM_0618420. In my opinion, this email exchange shows that Mr. Trivedi did receive some support from Mr. Agrawal, and Mr. Trivedi already had the information that he needed. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

262. When questioned about QCVARM_0618420, Mr. Agrawal testified that [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] Mr. Agrawal testified that, [REDACTED]

[REDACTED]

263. Mr. Agrawal responded to Mr. Trivedi’s ETE checker questions via email in January 2025. QCVARM_0618420 at -420–422. Once again, as Mr. Agrawal testified, [REDACTED]

[REDACTED]

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

[REDACTED]

[REDACTED] In fact, looking at the document shows that Mr. Agrawal was pointing Mr. Trivedi to the same “Armv9-A_ETE_BRBE_Compliance_Kit_User_Guide” that Mr. Agrawal pointed Mr. Trivedi to in 2023. QCVARM_0618420 at -420–422; ARM_01020098; QCVARM_0618977 at -978; *see, e.g.*, QCVARM_1078822.

264. Additional testimony supports my opinion. Mr. Agrawal testified that [REDACTED]

[REDACTED]

[REDACTED] Mr. Agrawal further testified that [REDACTED]

[REDACTED]

[REDACTED] For example, one of [REDACTED] [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

Id. I have reviewed a version of the ETE user guide. The sections Mr. Agrawal points Mr. Trivedi to do in fact answer Mr. Trivedi’s question. QCVARM_1078822 at -850–851, -857–858.

265. Accordingly, in my opinion, ETE checker support is not required to run the ACK, not required to configure the ETE checker, and is not required to complete the architecture verification process for the optional ETE trace feature. Further, in my opinion, Qualcomm had all of the necessary materials and documentation to configure the ETE checker on its own. My opinion is further supported by evidence showing that both Arm and Qualcomm considered ETE checker support to be support.

XII. QUALCOMM’S CLAIMS OF HARM

266. As noted above, I understand that Qualcomm contends Arm withheld OOB packages, ACK patches, and ETE checker support for Qualcomm’s Nuvia-based CPU cores. § X.I. In my opinion, these are optional support materials that are not required to complete the architecture verification process. § X.I.

267. I also understand Qualcomm contends that, due to Arm’s withholding of OOB packages and ACK patches, its “burden in verification” was “increased” and it had to “expend extra time and resources” to complete the architecture verification process. SAC ¶¶ 95–101, 173–180; Qualcomm’s 3rd Suppl. R&Os to Arm’s 1st Set of ROGs at 7–20; Qualcomm’s 2nd Suppl. R&Os to Arm’s 2nd Set of ROGs at 20–26; Trivedi Dep. Tr. at 33:17–21, 156:2–157:8, 172:1–178:9, 193:7–12; Golden Dep. Tr. at 82:20–85:18, 89:22–90:10, 91:6–19, 95:5–10. Specifically, Qualcomm contends that, “[b]y failing to deliver the OOB, Arm forced Qualcomm to expend extra time and resources to run ACK tests to verify that its products are compliant with the Arm ISA.” SAC ¶ 96. Qualcomm further contends that, “by failing to deliver the patches, Arm forced Qualcomm to use its own engineers to address issues that would have been addressed by Arm’s patches” *Id.* ¶ 97.

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

268. I also understand Qualcomm contends it was harmed due to Arm’s alleged failure to provide ETE checker support. Qualcomm’s 3rd Suppl. R&Os to Arm’s 1st Set of ROGs at 13, 18, 47; Qualcomm’s 2nd Suppl. R&Os to Arm’s 2nd Set of ROGs at 22–23; Qualcomm’s 1st Suppl. R&Os to Arm’s 3rd Set of ROGs at 24–25; Golden Dep. Tr. at 50:3–11. Specifically, Qualcomm contends that it had to “expend additional engineering effort to verify its custom cores” due to Arm’s alleged failure to provide “assistance in configuring the ETE Checker.” Qualcomm’s 3rd Suppl. R&Os to Arm’s 1st Set of ROGs at 13, 18.

269. Further, I understand Qualcomm contends it was harmed by Arm’s alleged failure to provide OOB packages and ACK patches because of the [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

270. I understand Qualcomm’s witnesses have further contended that [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] Qualcomm has not described this [REDACTED]

[REDACTED] theory of harm in any detail, it is not present in Qualcomm’s Second Amended Complaint,

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

and it is mentioned in a single sentence in Qualcomm’s Interrogatory responses. *See* SAC; Qualcomm’s 2nd Suppl. R&Os to Arm’s 2nd Set of ROGs at 23–24. Qualcomm’s corporate representative for architecture verification effort topics, Jignesh Trivedi, testified that [REDACTED]

[REDACTED] One of Qualcomm’s engineers, Jeff Golden, testified that [REDACTED]

271. As noted above, OOB packages and ACK patches are not required for a partner to verify that their design complies with the Arm architecture, but are instead support materials that, in some circumstances, Arm may provide to a requesting ALA partner. *See* §§ XI.A and XI.B. Further, as noted above, Qualcomm had everything it needed to use the ETE checker, and Arm provided support for using the ETE checker. *See* § XI.C. In my opinion, Qualcomm performed minimal “extra” work, if any, compared to if Arm had provided the allegedly withheld support (which, as Arm’s witnesses testified, were provided as a “courtesy,” and not as the usual practice *see* § XI.B). Also, in my opinion, any [REDACTED] to Qualcomm, to extent it exists, was due to Qualcomm’s actions, not Arm’s. Further, in my opinion, Qualcomm’s alleged harm due to [REDACTED] to the extent it can be understood, was not caused by Arm’s alleged withholding of OOB packages, ACK patches, or ETE checker support.

A. Qualcomm Performed Minimal “Extra” Work Due To Arm’s Alleged Withholding Of OOB Packages, ACK Patches, And ETE Checker Support

272. As noted above, Qualcomm alleges it had to expend additional time and resources due to Arm’s alleged withholding of OOB packages, ACK patches, and ETE checker support. *See*

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

supra § XII. I disagree. In my opinion, Qualcomm’s alleged “extra” work, if any, was minimal and was more typical of the type of work that is generally performed during the architecture compliance verification process.

273. As an initial matter, despite claiming that it had to expend “extra” efforts as a result of Arm’s alleged withholding, Qualcomm has not described its architecture compliance verification efforts from before the alleged withholding period in response to Arm’s interrogatories, and I understand that Qualcomm has refused to produce documents in response to Arm’s requests for production seeking documents showing these pre-alleged withholding period efforts. *See, e.g.*, Qualcomm’s 2nd Suppl. R&Os to Arm’s 2nd Set of ROGs at 20–26; Qualcomm’s R&Os to Arm’s 1st Set of RFPs at 4; Qualcomm’s R&Os to Arm’s 2nd Set of RFPs at 4–5; Qualcomm’s R&Os to Arm’s 3rd Set of RFPs at 4–5, 37–39; Qualcomm’s R&Os to Arm’s 4th Set of RFPs at 5; Qualcomm’s R&Os to Arm’s 5th Set of RFPs at 4–5; *see also* 05/28/2025 Meet and Confer at 92:13–103:18. I reserve the right to supplement my opinions should Qualcomm produce this information.

274. Based on my review of the evidence, in my opinion, any “extra” work that Qualcomm had to perform based on Arm’s alleged withholding of OOB packages, ACK patches, and ETE checker support was minimal and is typical of the work expected during an architecture compliance verification process.

275. For example, Qualcomm’s witnesses have testified that [REDACTED]

[REDACTED]

[REDACTED]

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

[REDACTED]

[REDACTED]

276. Further, as I explained above, [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

277. The fact that Qualcomm was able to complete the verification process for its Nuvia-based CPU cores (which it contends Arm withheld support materials for) on time or ahead of schedule and without hiring additional employees supports my opinion that the alleged extra work that Qualcomm claims it performed was minimal.

278. As explained below, additional evidence and testimony supports my opinion.

1. Qualcomm Performed Minimal “Extra” Work Due To Arm’s Alleged Withholding Of OOB Packages

279. I understand Qualcomm contends that, “[b]y failing to deliver the OOB, Arm forced Qualcomm to expend extra time and resources to run ACK tests to verify that its products are compliant with the Arm ISA.” SAC ¶ 96. As explained above, the OOB package contains two main components: a reference list of ACK tests and a set of test results from running the listed ACK tests on a reference model called the Architecture Envelope Model (AEM).¹⁰⁹ Trivedi Dep. Tr. at 99:3–100:7; Grisenthwaite Dep. Tr. at 135:9–22; QCVARM_0717964;

¹⁰⁹ Arm makes the AEM available to ALA partners, including QC, with the ACK. Weidmann Dep. Tr. at 150:2–4. Qualcomm does not contend that Arm withheld the AEM.

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

QCVARM_1042777. In my opinion, Qualcomm performed minimal “extra” work, if any, due to Arm’s alleged withholding of OOB packages. I have seen several pieces of evidence that support my opinion.

280. As I explained above, Qualcomm is capable of generating, and in fact does generate, its own “OOB packages” as part of its normal practice. For example, Mr. Trivedi testified that [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] In fact, [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

281. Further, Arm and Qualcomm witnesses have testified that generating the OOB reference list takes minimal effort. For example, Mr. Grisenthwaite testified that [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

282. As another example, Mr. Agrawal testified that [REDACTED]

[REDACTED]

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

[REDACTED]

[REDACTED]

283. Mr. Trivedi testified that [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

284. I have also seen evidence that, [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

285. Further, in my opinion, Qualcomm could have leveraged previously provided Arm OOB reference lists for Qualcomm’s various Nuvia-based CPU core designs. [REDACTED]

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

[REDACTED]

[REDACTED]

[REDACTED] [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] I agree that a sophisticated company, like Qualcomm, would be able to easily implement these OOB reference list changes on their own or at a minimum would have been able to leverage the OOBs that Arm previously delivered for the earlier Nuvia-based designs.

286. I have seen additional evidence and testimony that bolsters my opinion. For example, Qualcomm’s witnesses have testified that [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

[REDACTED]

[REDACTED]

[REDACTED] Also, Mr. Golden testified that [REDACTED]

[REDACTED]

[REDACTED] Further, Mr. Trivedi testified that [REDACTED]

[REDACTED] In my

opinion and experience, this would lead to at least some overlap in the CPU cores’ features, the ACK tests used to test compliance with those features, and the OOB reference list identifying those ACK tests, which Qualcomm could have leveraged to expedite the architectural verification process.

287. In particular, Qualcomm could have leveraged the several OOB packages that Arm had previously provided to Qualcomm for the Nuvia-based [REDACTED]
[REDACTED], which, as explained above, are also Nuvia-based designs that overlap with the [REDACTED] design. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

288. Further, I have seen evidence showing that Qualcomm had access to the OOBs that Arm previously provided to Qualcomm for the Nuvia-based designs prior to the alleged withholding period. For example, Mr. Trivedi testified that [REDACTED]

[REDACTED]

[REDACTED]

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

289. As another example, in a December 2023 IM chat between Mr. Golden and Shilpa Thakral (another verification engineer at Qualcomm), Mr. Golden wrote that [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

290. Further, in a February 2023 IM chat between Mr. Trivedi and Mr. Golden, Mr. Golden wrote that [REDACTED]

[REDACTED]

¹¹⁰ [REDACTED] refers to Qualcomm’s [REDACTED] design. Golden Dep. Tr. at 75:19–21.

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

[REDACTED]

[REDACTED]

291. This evidence further supports my opinion that a sophisticated company, like Qualcomm, would be able to easily implement OOB reference list changes on their own or at a minimum would have been able to leverage the OOBs that Arm previously provided for the earlier Nuvia-based designs. This is also consistent with my experience. For example, when working with large scale compliance testing, often times I and engineers on our team would elect to have only certain portions of the compliance testing suite run for a given compliance testing cycle. In the case where an engineer was running a compliance testing suite locally on their workstation, one would simply edit various configuration files to either run or not-run a given portion of the compliance suite. This was often done using a simple text editor on the appropriate configuration file. If a larger scale compliance test was required, say on a compute farm that is managed by a different or remote compliance team, a simple email request detailing the compliance tests to be added (or skipped) for that compliance testing cycle was all that was required.

292. Accordingly, in my opinion, Qualcomm performed minimal “extra” work, if any, due to Arm’s alleged withholding of the OOB reference list.

293. Further, in my opinion, Qualcomm also performed minimal “extra” work, if any, due to Arm’s alleged withholding of the OOB test results from running the listed ACK tests on the AEM. Qualcomm contends that [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

[REDACTED]

[REDACTED] I disagree.

294. As I explained above, in my opinion, Qualcomm can generate its own AEM test result list. The AEM is a reference model that is made available for download with the ACK. Weidmann Dep. Tr. at 150:2–4. Arm made the v8 and v9 ACKs—including each quarterly v8 and v9 ACK release—available for download on PDH. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

I am not aware of Qualcomm contending that it has not received the AEM.

295. Thus, in my opinion, Qualcomm had everything it needed to generate its own AEM result list and could have done so with minimal “extra” work. Qualcomm could simply take its internally generated OOB reference list, apply it to the AEM that Arm made available for download, and generate an AEM test result list. Arm’s corporate representative, Martin Weidmann, testified that [REDACTED]

¹¹¹ Product code [REDACTED] corresponds to the v8 ACK. ARM_00063298 at -299; Weidmann Dep. Tr. at 169:8–20.

¹¹² Product code [REDACTED] corresponds to the v8 ACK. Weidmann Dep. Tr. at 169:8–20.

¹¹³ Product code [REDACTED] corresponds to the v9 ACK. QCARM_0343954 at -956; Weidmann Dep. Tr. at 166:8–13.

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

296. Further, a “failure_analysis.txt” file is “shipped with the ACK.” QCVARM_0689117. Mr. Agrawal testified that [REDACTED]

[REDACTED]

[REDACTED] Mr. Agrawal further testified that

[REDACTED]

[REDACTED] Mr. Agrawal [REDACTED]

[REDACTED] This shows that Arm provided Qualcomm, [REDACTED]

with information about AEM failures and limitations, which Qualcomm could have referenced in analyzing its own ACK test results, and which would have reduced the [REDACTED]

[REDACTED]

Trivedi Dep. Tr. at 173:11–174:5.

297. Further, like the OOB reference list, Qualcomm could have leveraged Arm OOB test result lists for previous Nuvia-based cores for Qualcomm’s subsequent Nuvia-based cores, including because [REDACTED]

[REDACTED] Mr. Agrawal testified that [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

[REDACTED]

[REDACTED] Mr. Agrawal also testified that
[REDACTED]

[REDACTED]

[REDACTED] I agree that a sophisticated company, like Qualcomm, and an engineer such as Mr. Trivedi, would have been able to easily leverage previous OOB test result lists. This is consistent with my experience. For example, when I was bringing up a new microprocessor design that was not yet complete, but complete enough to begin running select instructions on, the prior compliance tests for the previous generation of microprocessor design were used. At early onset, it was often the case that only a very limited subset of the overall compliance test suite was run, such as simple load store instructions, simple arithmetic operations, etc. As the design progressed, additional tests from the previous generation’s microprocessor test suite would be added back. Ultimately, additional new test suites specific to the currently in development microprocessor (i.e., not the previous generation microprocessor design) would be added to exercise newly added functionality. An example of this might be newly designed instructions or modes of operation that were not present in the previous generation of microprocessor. While this was an iterative and

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

incremental process over the design cycle of the microprocessor, these changes were easily and readily implemented by various engineers.

298. Accordingly, in my opinion, Qualcomm performed minimal, if any, extra work due to Arm’s alleged withholding of OOB packages for Qualcomm’s Nuvia-based CPU cores. Qualcomm regularly generated the OOB reference list with ease and could have generated its own OOB test results list with ease. Further, in my opinion, Qualcomm could have leveraged previously provided Arm OOB packages for use with its [REDACTED] CPU cores.

2. Qualcomm Performed Minimal “Extra” Work Due To Arm’s Alleged Withholding Of ACK Patches

299. I understand Qualcomm contends that, “by failing to deliver the [ACK] patches, Arm forced Qualcomm to use its own engineers to address issues that would have been addressed by Arm’s patches” SAC ¶ 97. As noted above, Mr. Trivedi [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] However, Mr. Trivedi [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] As I explain below, in my opinion, this number of alleged ACK test issues is likely an overestimate. Regardless, in my opinion, Qualcomm performed minimal “extra” work due to Arm’s alleged withholding of ACK patches. I have seen several pieces of evidence that support my opinion.

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

300. To start, I have seen evidence suggesting that Mr. Trivedi’s identification of 35-50 ACK test issues that allegedly needed an ACK patch (Trivedi Dep. Tr. at 176:15–177:24) is likely an overestimate of the actual ACK test issues that occurred during the alleged withholding period.

For example,

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

301.

[REDACTED]

[REDACTED]

[REDACTED]

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] This evidence supports my opinion that Mr. Trivedi’s contention that [REDACTED] [REDACTED] was an overestimate.

302. Additional witness testimony further bolsters my opinion. For example, Mr. Trivedi agreed that [REDACTED] [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

303. As another example, Mr. Golden agreed that [REDACTED] [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

304. Moreover, in my opinion, any alleged “extra” work Qualcomm expended as a result of Arm allegedly withholding ACK patches was self-inflicted and unnecessary, at least because ACK patches are optional support materials and are not required to complete the verification

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

process. *See* § XI.B. As I explained above, [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] Further, during the period of Arm’s alleged withholding, Arm [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

305. Thus, Qualcomm could have waited to receive a fix for its legitimate ACK test issue in a subsequent ACK quarterly release. As noted above, I disagree with Qualcomm’s contention that it could not utilize fixes in subsequent ACK quarterly releases. *See* § XI.B. This supports my opinion that any alleged “extra” work Qualcomm spent as a result of Arm allegedly withholding ACK patches was an optional choice Qualcomm chose to make.

306. Regardless, in my opinion, Qualcomm’s claimed “extra” work was minimal. I understand that Qualcomm contends [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

[REDACTED]

[REDACTED]

307. However, [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] This is consistent with my understanding and my opinion. Sophisticated companies, like Qualcomm, perform thorough investigations into the cause of compliance test failures. Any additional time Qualcomm spent on this analysis—compared to the time it would have spent if Arm provided the allegedly withheld materials—was minimal, and I have not seen any evidence suggesting otherwise.

308. Additional evidence supports my opinion. As explained above, Mr. Trivedi estimated that [REDACTED]

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

[REDACTED]

[REDACTED] In my opinion, this was likely an overestimate, including based on the evidence I have discussed above, such as the [REDACTED] reports and the testimony of Arm’s and Qualcomm’s engineers. Further, Mr. Golden testified that

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

309. Regardless, Mr. Trivedi further testified that, [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

[REDACTED]

[REDACTED]

310. Jeff Golden, a hardware engineer at Qualcomm who was involved in the custom core architectural verification process, testified that [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] This is consistent with Mr. Trivedi’s testimony:

[REDACTED]

[REDACTED]

311. Based on my verification experience, the witnesses testimony, and Qualcomm’s “extra” work claims, in my opinion, it would likely not have taken Qualcomm’s entire verification team to address these alleged ACK test issues. Rather, for a given test requiring a fix or update, it is more likely that a single engineer would be fractionally dedicated to this. In my experience, this would entail working perhaps a few hours on this task over the course of a few days until a fix to the test was achieved.

312. Mr. Golden also testified that [REDACTED]

[REDACTED]

[REDACTED]

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] Mr. Golden testified that [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

313. This is consistent with my understanding and experience. As I noted above, Qualcomm is a sophisticated company with a team of verification engineers. In my experience, developing compliance-test fixes or otherwise overcoming compliance-test issues is well within the wheelhouse of an architectural verification engineer, and often takes minimal additional effort, as these witnesses testified.

314. Accordingly, in my opinion, Qualcomm performed minimal “extra” work as a result of Arm allegedly withholding optional, courtesy ACK patches. Qualcomm chose to do this

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

work instead of waiting for a subsequent quarterly ACK release, which incorporated ACK test fixes for Qualcomm’s legitimate ACK test issues. Further, regardless of whether Arm provided an optional ACK patch, Qualcomm regularly performed its own investigation of ACK test failures. Also, in my opinion, Mr. Trivedi’s and Mr. Golden’s testimony shows that Qualcomm spent minimal time and effort addressing ACK test issues that allegedly would have been solved by an ACK patch prior to the next quarterly release.

3. Qualcomm Performed Minimal “Extra” Work Due To Arm’s Alleged Withholding Of ETE Checker Support

315. I understand Qualcomm contends it had to “expend additional engineering effort to verify its custom cores” due to Arm’s alleged failure to provide “assistance in configuring the ETE Checker,” Qualcomm’s 3rd Suppl. R&Os to Arm’s 1st Set of ROGs at 13, and “additionally expended extra engineering time attempting to make the ETE checker functional while Arm refused to engage,” *id.* at 18. *See also* [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

However, I have not seen any evidence or testimony quantifying this alleged “extra engineering time,” nor have I seen evidence or testimony suggesting that the extra work was significant.

316. The evidence I have seen suggests that any additional work Qualcomm expended due to Arm’s alleged withholding of ETE checker support was minimal. As noted above, Qualcomm had everything it needed to use the ETE checker. *See* § XI.C. Qualcomm had access to the v9 ACK (and each subsequent quarterly ACK release), which contained the full suite of ACK tests, including those directed to testing compliance for the ETE trace feature. *Id.*

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

Qualcomm also had access to the ETE checker, which is delivered with the ACK. *Id.* Qualcomm also had access to the relevant ACK-related documentation, including documentation regarding configuring the ETE checker. *Id.* As I explained, Qualcomm is a sophisticated company with sophisticated verification engineers. Qualcomm is able to reference the Arm architecture, the ACK, and the associated user guides and documentation to complete the verification process—including the ETE checker compliance process—on its own. *Id.* Mr. Agrawal testified that

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

317. My opinion is further supported by evidence suggesting that Qualcomm did in fact receive ETE checker support from Arm. For example, [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

318. This is consistent with my understanding of how the ETE checker is configured. The ETE checker “support” Mr. Agrawal provided to Qualcomm simply pointed Mr. Trivedi back

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

to materials Mr. Trivedi already had. As Mr. Agrawal testified, [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] Mr. Agrawal further testified that [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

319. I understand that Qualcomm points to an email exchange between Mr. Agrawal and Mr. Trivedi as evidence of Arm failing to provide ETE checker support. Qualcomm’s 2nd Suppl. R&O’s to Arm’s 2nd Set of ROG’s at 22–23; QCVARM_0618420. In my opinion, this email exchange shows that Mr. Trivedi did receive some support from Mr. Agrawal regarding the configuration of the ETE checker, and it also shows that Mr. Trivedi already had the information that he requested. [REDACTED]

[REDACTED]

[REDACTED]

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

[REDACTED]

[REDACTED]

320. When questioned about QCVARM_0618420, Mr. Agrawal testified that [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] Mr. Agrawal testified that, [REDACTED]

[REDACTED]

321. [REDACTED]

[REDACTED]

[REDACTED] As Mr. Agrawal testified, [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

322. Additional testimony supports my opinion. Mr. Agrawal testified that [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] Mr. Agrawal further testified that [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

323. Accordingly, based on the evidence that is available, it is my opinion that any alleged extra work Qualcomm expended as a result of Arm withholding ETE checker support was minimal. Qualcomm had all the tools to use the ETE checker and was in fact receiving support on how to use it during the alleged withholding period. I have not seen any evidence suggesting that the amount of extra work that Qualcomm claims it had to perform as a result of Arm’s alleged withholding of support regarding the ETE checker was in any way significant.

B. The Alleged [REDACTED] To Qualcomm, If Any, Was Due To Qualcomm’s Actions, Not Arm’s

324. As noted above, Qualcomm contends it [REDACTED] due to Arm’s alleged withholding of OOB packages, ACK patches, and ETE checker support. *See supra* § XII. Qualcomm’s expert, Dr. Patrick Kennedy does not quantify [REDACTED] 08/08/2025 Expert Report of Patrick F. Kennedy, Ph.D. Regardless, in my opinion, any [REDACTED] to extent it exists, was due to Qualcomm’s actions, not Arm’s.

325. As explained above, Arm provides tools, such as the ACK and its suite of tests, to help Qualcomm complete the verification process. However, as Mr. Agrawal testified, [REDACTED]

[REDACTED]

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

[REDACTED]

[REDACTED]

326. This is consistent with my understanding and opinion. In my experience, the company designing the custom CPU core and completing the verification process (*e.g.*, Qualcomm) decides when they are ready to tape out their product as a technical matter. The developer of the CPU, not the developer of the architecture, knows the exact details and features of the custom implementation.

327. [REDACTED]

[REDACTED] For example, an ALA partner may submit “waivers” to Arm for ACK tests that failed on the partner’s implementation. Grisenthwaite Dep. Tr. at 138:22–139:10. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

328. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] Qualcomm’s 2nd Suppl. R&Os to Arm’s 2nd Set of ROGs at 22–23; Qualcomm’s 3rd Suppl. R&Os to Arm’s 1st Set of ROGs at 17–18.

329. I understand Qualcomm contends it [REDACTED]

[REDACTED]

[REDACTED]

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

[REDACTED] The evidence and testimony support my opinion. For example, Mr. Golden testified that [REDACTED]

[REDACTED] However, Mr. Trivedi testified that [REDACTED]

[REDACTED] An April 2025 communication between Mr. Trivedi and Mr. Agrawal is consistent with Mr. Trivedi’s testimony. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

330. Further, [REDACTED] are common in custom CPU core design industry. For example, an

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

[REDACTED]

[REDACTED]

[REDACTED]

331. Regardless, I have seen no evidence that Qualcomm’s [REDACTED]
[REDACTED]. Mr. Trivedi
testified that [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

332. As explained below, additional evidence related to each allegedly withheld support material or service bolsters my opinion.

1. The Alleged [REDACTED] Due To Arm’s Alleged Withholding Of OOB Packages, If Any, Was Minimal

333. I understand Qualcomm contends that, “[w]ithout OOBs from Arm,” Qualcomm
[REDACTED]
[REDACTED]
[REDACTED]

Qualcomm’s 2nd Suppl. R&Os to Arm’s 2nd Set of ROGs at 22–23. As I explained above, any
[REDACTED], to the extent it existed, was due to Qualcomm’s actions, not Arm’s. *See supra*
XII.B. Further, Arm-provided OOB packages are optional support materials that are not required

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

for the verification process, and therefore any alleged withholding by Arm is unrelated to Qualcomm’s alleged [REDACTED] See § XI.A. Regardless, in my opinion, any [REDACTED] due to Arm’s alleged withholding of OOB packages was minimal.

334. As noted above, Qualcomm produces its own internal reference list as part of its normal verification process. See § XI.A. For example, Mr. Trivedi testified that [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

335. Qualcomm uses its reference list to “cross-reference” and “bless” Qualcomm’s internally generated OOB reference list:

[REDACTED]

[REDACTED]

336. Contrary to Qualcomm’s assertions, I have seen evidence that [REDACTED]

[REDACTED]

[REDACTED] For example, [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

[REDACTED]

[REDACTED]

337. As another example, Qualcomm was [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

338. Thus, at least in this instance, [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

[REDACTED]

[REDACTED]

339. In my opinion, this is further evidence that Qualcomm was capable of generating a very accurate OOB reference list on its own. [REDACTED]

[REDACTED]

340. As another example, Arm provided some OOB reference list support to Qualcomm during the alleged withholding period. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] I disagree

with Mr. Trivedi that [REDACTED]

[REDACTED]

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

341. A “per-suite” count of OOB tests is as its name suggests; for each of the suites of ACK tests (which generally concern related functionality), it is the number of ACK tests in that suite. Conversation with Vivek Agrawal. It is not simply the total number of ACK tests included in a reference list for a given configuration, but it provides much more helpful detail than that. *Id.* I understand from Vivek Agrawal that the number of ACK tests in a given suite can vary, with some suites having as few as 50 tests, and others may be as high as 8,000. *Id.* A verification engineer, like Mr. Trivedi, would have been able to use this detailed information to [REDACTED]

[REDACTED]

[REDACTED]

342. As I described above, Qualcomm had access to Arm-provided OOBs for Nuvia-based cores and would have been able to leverage those OOBs for subsequent versions or variations of those cores. *See* § XII.A.1. For example, [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] I agree that a sophisticated company, like Qualcomm, would be able to easily implement these OOB reference list changes on their own or at a minimum would have been able to leverage the OOBs that Arm previously delivered for the earlier Nuvia-based designs.

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

344. Further, I have seen evidence showing that Qualcomm had access to the OOBs that Arm previously provided to Qualcomm for the Nuvia-based designs prior to the alleged withholding period. For example, Mr. Trivedi testified that [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] Mr. Trivedi also testified that [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

345. As another example, [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] [REDACTED] When questioned about this document, Mr. Golden agreed that [REDACTED]

[REDACTED]

[REDACTED]

¹¹⁴ [REDACTED] refers to Qualcomm’s [REDACTED] design. Golden Dep. Tr. at 75:19–21.

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

[REDACTED] Mr. Trivedi was questioned about this same document, and agreed that [REDACTED]

346. Further, in a February 2023 IM chat between Mr. Trivedi and Mr. Golden, Mr. Golden wrote that [REDACTED]

[REDACTED] Mr. Golden also wrote that

[REDACTED] Accordingly, in my opinion, Qualcomm would have been able to leverage previous Arm-provided OOBs for its Nuvia-based cores, which would have [REDACTED] that resulted from Arm’s alleged withholding of OOB packages.

347. Additional evidence supports my opinion. As I explained above, there are three possible ACK test results: pass, fail, or skip. *See* § X.A; Trivedi Dep. Tr. at 73:3–9; George Dep. Tr. at 20:23–21:19. Test skips occur when a test does not correspond to any feature that is present in a partner’s CPU. Bhattacharya Dep. Tr. at 43:6–10; George Dep. Tr. at 20:23–21:19. Thus, had Qualcomm run the entire ACK suite against their Nuvia-based CPUs, any irrelevant test would have simply shown up as a skip on the test report, and Qualcomm could have disregarded those results. *Id.* Running the full suite of ACK tests would have required little additional computing power and time. For example, I have seen evidence showing that [REDACTED]

[REDACTED] I have also seen evidence showing that

[REDACTED] This is a minimal amount of testing time, in my experience.

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

An OOB reference list—whether created by Arm or by Qualcomm—would not be necessary for this process. This would have mitigated any [REDACTED] that Qualcomm contends it was subject to, and further supports my opinion.

348. As noted above, the [REDACTED] Qualcomm contends resulted from Arm’s alleged withholding of OOB packages is attributable to Qualcomm, not Arm. Regardless, in my opinion, any [REDACTED] with Arm’s alleged withholding of OOB packages was minimal.

2. The Alleged [REDACTED] Due To Arm’s Alleged Withholding Of ACK Patches, If Any, Was Minimal

349. I understand Qualcomm contends that “Arm’s failure to provide ACK patches ... [REDACTED] Qualcomm’s 3rd Suppl. R&Os to Arm’s 1st Set of ROG’s at 17–18. As I explained above, any alleged [REDACTED], was due to Qualcomm’s actions, not Arm’s. *See supra* § XII.B. Further, ACK patches are optional support materials that are not required for the verification process, and therefore any alleged withholding by Arm is unrelated to Qualcomm’s [REDACTED] *See* § XI.B. Regardless, in my opinion, any [REDACTED] due to Arm’s alleged withholding of ACK patches was minimal.

350. As noted above, Arm incorporates ACK test fixes into subsequent quarterly releases of the ACK. *See* § XI.B; Weidmann Dep. Tr. at 90:6–17; Bhattacharya Dep. Tr. at 50:13–18. Further, the quarterly ACK releases are made available to “all partners with a relevant license, including Qualcomm.” Weidmann Dep. Tr. at 122:8–123:2. I have seen evidence that, during the alleged withholding period, Qualcomm had access to the v8 and v9 ACK, including each quarterly v8 and v9 ACK release, via PDH.¹¹⁵ *Id.*; [REDACTED]

¹¹⁵ PDH was formerly known as “Arm Connect.” Weidmann Dep. Tr. at 20:11–21:13.

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

I am not aware of Qualcomm contending otherwise.

351. Also, during the period of Arm’s alleged withholding, Arm [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

352. Accordingly, in my opinion, [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

¹¹⁶ Product code [REDACTED] corresponds to the v8 ACK. ARM_00063298 at -299; Weidmann Dep. Tr. at 169:8–20.

¹¹⁷ Product code [REDACTED] corresponds to the v8 ACK. Weidmann Dep. Tr. at 169:8–20.

¹¹⁸ Product code [REDACTED] corresponds to the v9 ACK. QCARM_0343954 at -956; Weidmann Dep. Tr. at 166:8–13.

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

353. I understand that Qualcomm contends it could not use the ACK test fixes in the ACK quarterly releases because [REDACTED]

[REDACTED]

[REDACTED] I understand that Qualcomm also contends [REDACTED]

[REDACTED]

[REDACTED] I disagree.

354. As I explained above, [REDACTED]

[REDACTED] See § XI.B.

Further, Mr. Trivedi admits that [REDACTED]

[REDACTED] In fact, Mr. Weidmann testified that [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

355. Further, as noted above, [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] Conversation with Vivek Agrawal. Arm’s quarterly ACK releases are accompanied by release notes that identify sections of the ACK that have been updated to address ACK test issues.

Conversation with Vivek Agrawal. In my opinion, a sophisticated partner, like Qualcomm, [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]. Conversation with Vivek Agrawal; ARMQC_02761714. [REDACTED]

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

[REDACTED]

[REDACTED]

[REDACTED]

356. Further, Arm’s alleged withholding of ACK patches did not put any [REDACTED] on Qualcomm relative to Arm’s other ALA partners. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] The fixes that are incorporated into the quarterly ACK releases are provided to all ALA partners via PDH.¹¹⁹ Weidmann Dep. Tr. at 90:6–17. [REDACTED]

[REDACTED] In fact, Ms. Bhattacharya testified that [REDACTED]

[REDACTED] I have not seen evidence of an ALA partner receiving an ACK patch for an ACK test issue that Qualcomm reported, but that Qualcomm allegedly did not receive. Qualcomm, [REDACTED] did not receive the fix until the next quarterly ACK release. Thus, [REDACTED]

[REDACTED]

[REDACTED]

357. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

¹¹⁹ PDH was formerly known as “Arm Connect.” Weidmann Dep. Tr. at 20:11–21:13.

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

[REDACTED]

358. As noted above, the [REDACTED] Qualcomm contends resulted from Arm’s alleged withholding of ACK patches is attributable to Qualcomm, not Arm. Regardless, in my opinion, any [REDACTED] associated with Arm’s alleged withholding of ACK patches was minimal.

3. The Alleged [REDACTED] Due To Arm’s Alleged Withholding Of ETE Checker Support, If Any, Was Minimal

359. I understand that Qualcomm has not identified [REDACTED] that it alleges is due to Arm’s alleged withholding of ETE checker support. Qualcomm’s 3rd Suppl. R&Os to Arm’s 1st Set of ROGs; Qualcomm’s 2nd Suppl. R&Os to Arm’s 2nd Set of ROGs; Qualcomm’s 1st Suppl. R&Os to Arm’s 3rd Set of ROGs; SAC. Mr. Trivedi provided some testimony related to ETE checker [REDACTED] but was not specific:

[REDACTED]

[REDACTED]

360. As I explained above, any [REDACTED], to the extent it existed, was due to Qualcomm’s actions, not Arm’s. *See supra* XII.B. Further, ETE checker support is an optional support service that is not required for the verification process, and therefore any alleged withholding by Arm is unrelated to Qualcomm’s alleged [REDACTED] *See* § XI.C. Regardless, in my opinion, any [REDACTED] due to Arm’s alleged withholding of ETE checker support was minimal.

361. As noted above, Qualcomm had everything it needed to use the ETE checker. *See* § XI.C. Qualcomm had access to the v9 ACK (and each subsequent quarterly ACK release), which

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

contained the full suite of ACK tests, including those directed to testing compliance for the ETE trace feature. *Id.* Qualcomm also had access to the ETE checker, which is delivered with the ACK. *Id.* Qualcomm also had access to all ACK-related documentation, including documentation regarding configuring the ETE checker. *Id.* As I explained, Qualcomm is a sophisticated company with sophisticated verification engineers. Qualcomm is able to reference the Arm architecture, the ACK, and the associated user guides and documentation to complete the verification process—including the ETE checker compliance process—on its own. *Id.* Mr. Agrawal testified that

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

362. My opinion is further supported by evidence suggesting that Qualcomm did in fact receive ETE checker support from Arm. For example, [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

363. This is consistent with my understanding of how the ETE checker is configured. The ETE checker “support” Mr. Agrawal provided to Qualcomm simply pointed Mr. Trivedi back

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

to materials Mr. Trivedi already had. As Mr. Agrawal testified, [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] Mr. Agrawal further testified that [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

364. I understand that Qualcomm points to an email exchange between Mr. Agrawal and Mr. Trivedi as evidence of Arm failing to provide ETE checker support. Qualcomm’s 2nd Suppl. R&O’s to Arm’s 2nd Set of ROG’s at 22–23; QCVARM_0618420. In my opinion, this email exchange shows that Mr. Trivedi did receive some support from Mr. Agrawal regarding the configuration of the ETE checker, and it also shows that Mr. Trivedi already had the information that he needed. [REDACTED]

[REDACTED] [REDACTED] [REDACTED]

[REDACTED]

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

[REDACTED]

[REDACTED]

365. When questioned about QCVARM_0618420, Mr. Agrawal testified [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] Mr. Agrawal testified that, [REDACTED]

[REDACTED]

366. Mr. Agrawal responded to Mr. Trivedi’s ETE checker questions via email in January 2025, after Arm had decided to resume supporting Qualcomm regarding the cores Arm contends are unlicensed Nuvia-based cores. QCVARM_0618420 at -420–422. As Mr. Agrawal testified, [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

367. Additional testimony supports my opinion. Mr. Agrawal testified that [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] Mr. Agrawal further testified that [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

368. Accordingly, based on the evidence that is available, it is my opinion that any alleged [REDACTED] due to Arm’s alleged withholding of ETE checker support was minimal. Qualcomm had all the tools to use the ETE checker and was in fact receiving support on how to use it during the alleged withholding period. I have not seen any evidence suggesting that the amount of [REDACTED] Qualcomm faced as a result of Arm’s alleged withholding of support regarding the ETE checker was in any way significant.

XIII. THE PHOENIX-BASED AND PEGASUS-BASED CORES ARE NUVIA-BASED CORES

369. I understand that a dispute in the first case concerned whether the Phoenix-based and Pegasus-based cores were Nuvia-based cores that used code developed at Nuvia under the Nuvia ALA prior to the Qualcomm acquisition. In my opinion, the relevant Qualcomm custom CPU cores incorporate pre-acquisition Nuvia code and are based on Nuvia designs. I have seen several pieces of evidence that support my opinion.

370. I have seen internal Arm communications that support my opinion. For example, I have seen [REDACTED]

[REDACTED]

[REDACTED]

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

[REDACTED]

[REDACTED]

371.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] I

agree that the minor configuration changes between these cores is an indicator that they utilized code from the Nuvia CPU cores developed at Nuvia.

372. Further, Qualcomm’s counsel stated that, “[a]t trial in *Arm Ltd. v. Qualcomm Inc.*, Qualcomm witnesses repeatedly acknowledged that Qualcomm continued using Nuvia Technology.” Qualcomm’s Opposition to Arm’s August 11, 2025 Motion to Compel at 5. For example, Gerard Williams, the former co-founder of Nuvia, testified that Qualcomm did not start over with a new CPU core design after acquiring Nuvia:

Q. Okay. You didn’t start over with a new design, right?

A. You’re talking about CPU core?

Q. Yes.

A. No, because that was not believed to be Arm technology, that was Nuvia technology.

Q. So you kept working on the same code base that you had been working on at Nuvia, right?

A. Yes, because that was Nuvia technology, that’s why that was done.

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

Qualcomm’s Opposition to Arm’s August 11, 2025 Motion to Compel, Ex. 26 at 401:9–18. Mr. Williams also agreed that Qualcomm “didn’t swap out the RTL that Nuvia had written” and “incorporated Nuvia’s technology into Qualcomm products.” *Id.* at 409:16–21; *see also id.* at 412:9–19 (Mr. Williams agreeing that Qualcomm kept using “Phoenix code” “after Qualcomm acquired Nuvia” and that “elements of that Nuvia Phoenix code [are] in the compute and mobile platforms at Qualcomm”).

373. As another example, Cristiano Amon, Qualcomm’s CEO, testified that “[t]he Qualcomm designs may include Nuvia technology,” *id.* at 808:1–4, agreed that Qualcomm used the Nuvia CPUs for Qualcomm’s Pakala, Hamoa, and Nordschleife Snapdragon chips, *id.* at 809:1–12, and agreed that, “[t]o this day, there is Nuvia code that was created under the Nuvia ALA that is in Qualcomm products,” *id.* at 824:21–24.

374. Qualcomm engineer, Jeff Golden, also testified that [REDACTED]

[REDACTED]

[REDACTED] Further, Mr. Trivedi testified that [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

375. I have also seen evidence that Qualcomm used Nuvia abbreviations to refer to Qualcomm’s custom CPU team and cores it alleges are Qualcomm designs. For example, a

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

[REDACTED]

[REDACTED] Mr. Golden testified that [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] Mr. Trivedi also testified that [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

376. Further, in a November 2022 IM chat between Jean-Francois Vidon, Qualcomm’s Senior Director of Engineering, and Manju Varma, Qualcomm’s Senior Director of CPU Product Management, Mr. Vidon noted that [REDACTED]

[REDACTED] Specifically, Mr. Vidon noted that [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] Mr. Vidon also suggested that [REDACTED]

[REDACTED]

377. Accordingly, the evidence supports my opinion that Qualcomm’s [REDACTED]

[REDACTED] cores contain code developed from Nuvia developments.

Even if the at-issue custom CPU core designs include code developed after Qualcomm purchased

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

Nuvia, they appear to likewise have lines of code that were originally developed by Nuvia, at Nuvia, and for Nuvia’s custom CPU core designs.

XIV. ARM’S [REDACTED]

378. In my opinion, [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

380. [REDACTED] which stands for [REDACTED] is the [REDACTED]

[REDACTED] Weidmann Dep. Tr. at

58:12–21. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] 121

381. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] 124

-
- [REDACTED]
 - [REDACTED]
 - [REDACTED]
 - [REDACTED]
 - [REDACTED]

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

382.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]



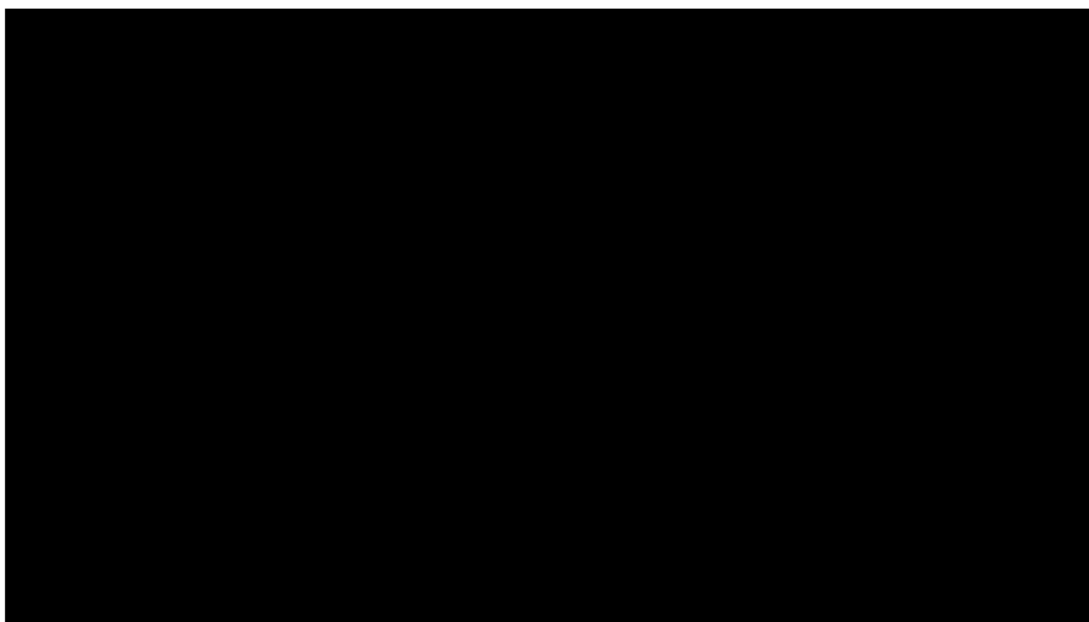
[REDACTED] at -178.

383.

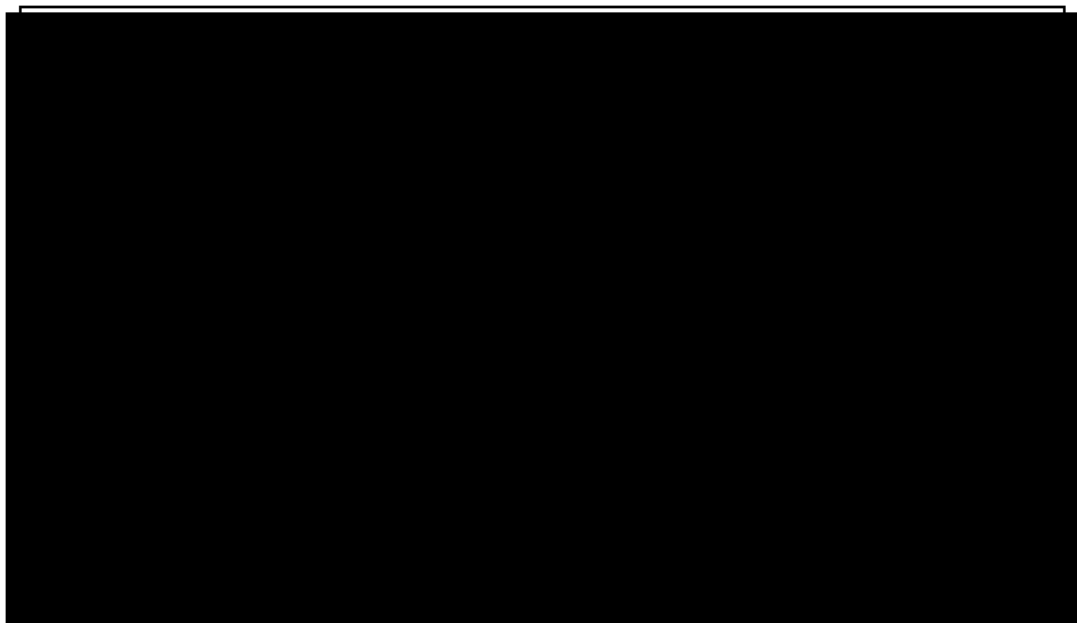
[REDACTED]

[REDACTED]

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY



ARMQC_02771168 at -179.



ARMQC_02771168 at -180.

384.



HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

385.

[REDACTED]

[REDACTED]

ARMQC_02771168 at -181.

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

386. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

387. [REDACTED]

[REDACTED]

-
- [REDACTED]
 - [REDACTED]
 - [REDACTED]
 - [REDACTED]
 - [REDACTED]
 - [REDACTED]

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

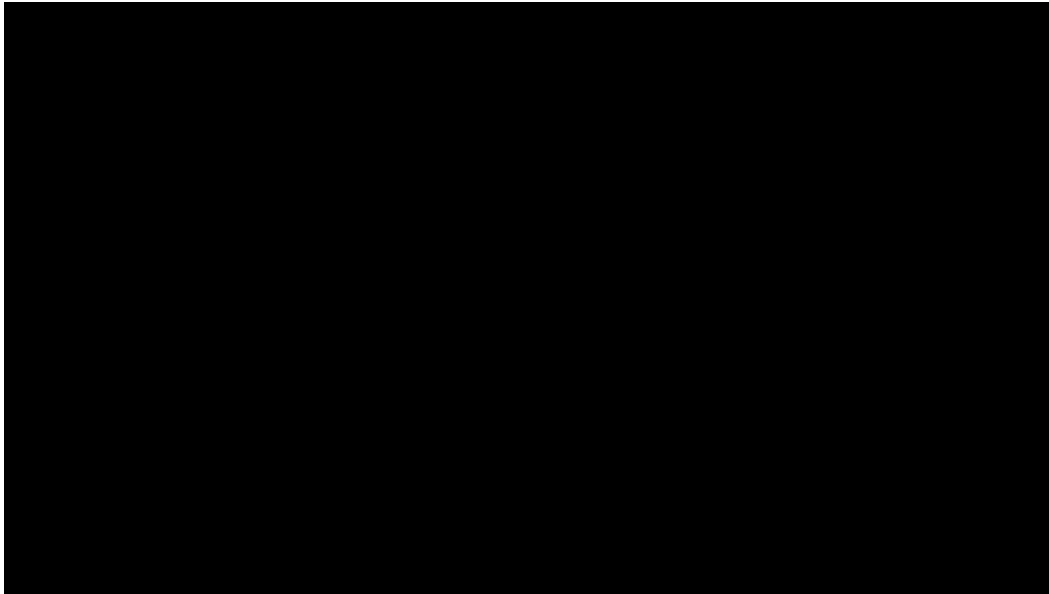
[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY



ARMQC_02771168 at -185.

390. Arm’s Chief Architect, Richard Grisenthwaite, has described [REDACTED] as

[REDACTED] Further, Arm’s Director of Product

Management, Martin Weidmann described [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

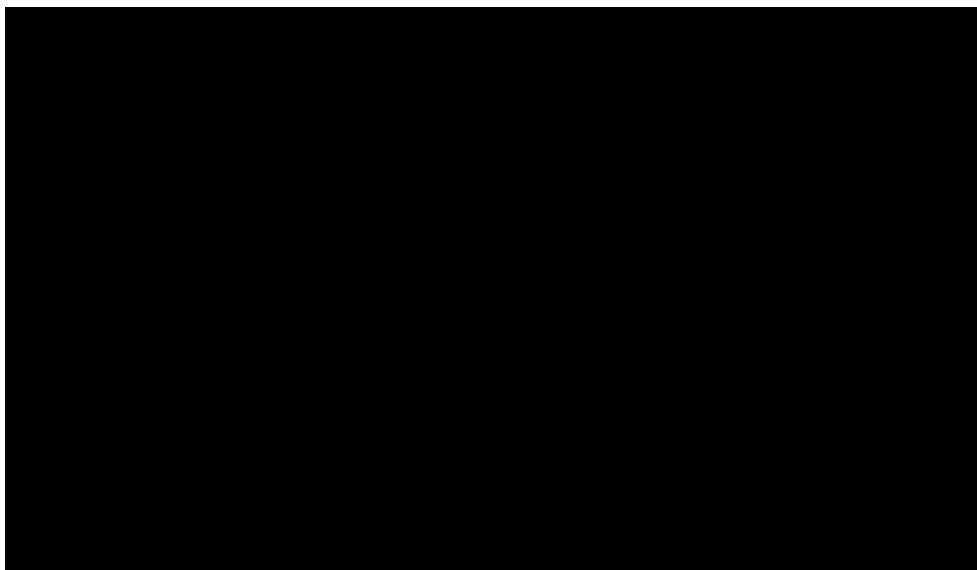
This testimony further supports my opinion that the [REDACTED]

[REDACTED]

391. [REDACTED] [REDACTED] [REDACTED]

[REDACTED]

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY



ARMQC_02771168 at -187.

392. Further, for [REDACTED], Arm is [REDACTED], [REDACTED]

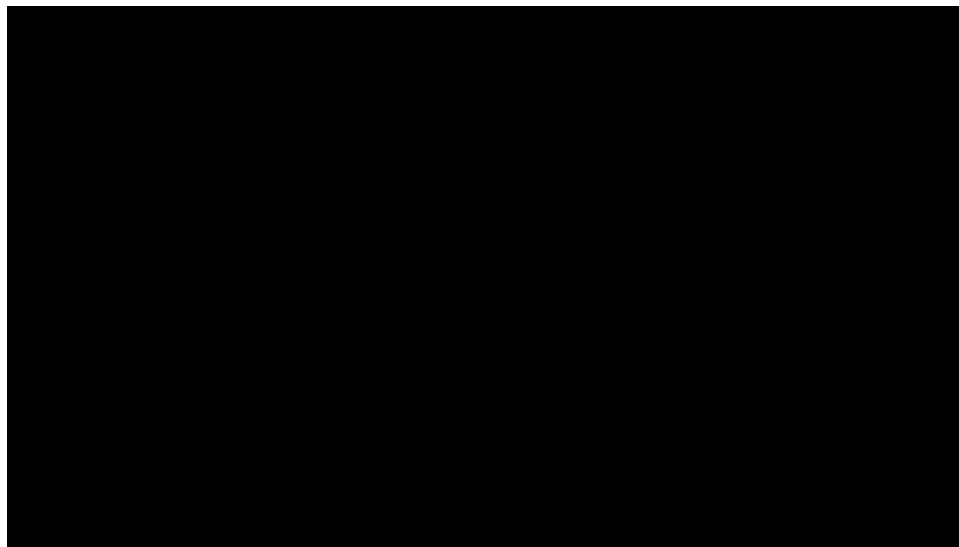
[REDACTED] Weidmann Dep. Tr. at 60:7–20.

393. [REDACTED]

[REDACTED] [REDACTED]

[REDACTED]

[REDACTED]



ARMQC_02771168 at -172.

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

394. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

XV. INCORRECT TECHNICAL ASSUMPTIONS IN MR. POSNER’S REPORT

395. In my opinion, Qualcomm’s experts rely on technical assumptions that are unfounded or simply incorrect. Specifically, Qualcomm’s expert, Eric Posner, relies on the assumption that Arm’s implementation cores, sometimes called “off-the-shelf” (OTS) cores, offer lower-quality performance than Qualcomm’s Nuvia-based custom cores. In my opinion, this is an incorrect assumption that is rebutted by the evidence in this case.

Mr. Posner’s Assumption That Arm’s Implementation Cores Underperform Qualcomm’s Custom Cores Is Unsupported

396. Qualcomm’s expert, Eric Posner, repeatedly relies on the assumption that “Arm’s OTS [off-the-shelf] cores ... are more expensive and offer lower-quality performance” than Qualcomm’s custom cores and that Arm’s OTS cores are used in the “lower-tier” portion of the market. Posner Rpt. ¶¶ 28, 61, 77.¹³⁴ I disagree.

¹³⁴ Mr. Posner also opines that “[a]n OEM ... might regard a chip containing an OTS Arm CPU and a Qualcomm chip containing a Qualcomm custom CPU as substitutes or near substitutes,” Posner Rpt. ¶ 37, which seems to

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

397. Mr. Posner bases his assumption on the testimony of Qualcomm’s own witnesses. First, Mr. Posner relies on Ziad Asghar, Qualcomm’s SVP & General Manager for XR and Spatial Computing, who testified as follows:

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

398. Second, Mr. Posner relies on Cristiano Amon, Qualcomm’s CEO, who testified as follows:

[REDACTED]

contradict his technical assumption that Arm’s OTS cores are more expensive and offer lower-quality performance.

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

[REDACTED]

[REDACTED]

399. Third, Mr. Poser cites paragraph 51 of the SAC, which, in turn, cites Arm Holdings, Ltd.’s Registration Statement (Form F-1) (Aug. 21, 2023) at 86, 131. However, neither paragraph 51 of the SAC or the cited portions of the Form F-1 support Posner’s assumption. Instead, these materials discuss Arm’s business as including ALA and TLA licenses.

400. In my opinion, the evidence in this case, including Qualcomm’s own documents and witness testimony, shows that Arm’s implementation cores often outperform Qualcomm’s custom cores, and that many factors other than the RTL can affect performance.

1. The Evidence Shows That Arm’s Implementation Cores Often Outperform Qualcomm’s Custom Cores

401. In my opinion, the evidence in this case, including Qualcomm’s own documents and witness testimony, shows that Arm’s implementation cores frequently outperform Qualcomm’s custom cores.

402. The testimony of Qualcomm’s Senior Director of Engineering, Jean-Francois (Jeff) Vidon supports my opinion. Mr. Vidon is [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

Mr. Vidon testified regarding numerous instances in which Arm’s TLA cores offered better PPA than Qualcomm’s custom cores.

403. For example, Mr. Vidon testified about [REDACTED]

[REDACTED] In this

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

IM chain, [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

404. As another example, Mr. Vidon further testified that [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

405. As another example, Mr. Vidon further testified that [REDACTED]

[REDACTED]

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

406. As another example, Mr. Vidon further testified that [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

407. As another example, Mr. Vidon testified about [REDACTED]

[REDACTED]

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

[REDACTED] Mr.

Vidon testified that [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

408. The testimony of Qualcomm’s Principal Engineer for Automotive CPUs, Richard Meacham, also supports my opinion. For example, Mr. Meacham testified that [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

409. The testimony of Qualcomm’s Senior Director of Qualcomm engineering over the CPU design team, Gerard Williams, also supports my opinion. For example, Mr. Williams testified that [REDACTED]

[REDACTED]

410. Thus, while Mr. Posner relies exclusively on the unsupported and biased testimony of Qualcomm’s CEO and a Qualcomm category general manager to support his assumption that

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

Qualcomm’s Nuvia-based custom cores outperform Arm’s implementation cores, Mr. Posner ignores the testimony and statements of Qualcomm’s engineers who are actually performing the relative performance assessments. These Qualcomm engineers’ own testing data shows that Arm implementation cores are “hard to beat in any aspect” and in fact significantly outperform Qualcomm’s Nuvia-based custom cores “on a performance and power basis,” as explained above.

2. Many Factors Besides the RTL Affect Performance

411. In my opinion, Mr. Posner’s assumption that Qualcomm’s Nuvia-based custom cores outperform Arm’s implementation cores is also flawed because it does not account for the fact that many aspects other than the RTL or design for a core can affect the performance of a SoC. For example, the foundry that is used to create the silicon can affect performance, the trade-offs and constraints made during the SoC design process can affect performance, and so can the size of the cache, the location of the cache relative to the CPU, the interconnects being used, the width of the bus being used, and the specific materials used in the design process, such as the thickness of the silicon or the oxide layers, which can limit clock frequency.

412. Consider the case of two equivalent SoC designs with identical CPU cores that are implemented at different process nodes may have varying characteristics, such as the frequency that the device can be safely operated at, the thermal characteristics of the device, or the amount of power that the device consumes. Even in the case when the two devices are implemented using identical process nodes, there are still other factors within the SoC itself that may impact various aspects of system performance. One example of this is the memory system. While the CPU cores of the two designs may be identical, they may utilize differing memory systems. The amount of cache in the CPU and SoC design, the cache hierarchy and bandwidth of the cache(s), or the memory system overall may impact the performance of the device in terms of computational throughput, power consumption, and chip area. There are any number of factors in the overall

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

SoC design that may impact the overall performance, beyond just that of the CPUs themselves, even for identical process nodes. When these designs are manufactured at differing process nodes, the differences in power, performance and other characteristics are even further varied.

413. Chip designers may choose to implement only certain features that they deem important to their intended use-case and disregard other, non-essential features, which can result in different levels of performance. One example of this would be removing the floating point ISA functionality, which is not needed 99.9% of the time. If a chip designer truly needed this functionality for a one-off use case, the functionality could be emulated in software with performance penalty overhead.

414. In the automotive segment, I understand that some chip designers may want (or can live with) lower performance and thus manufacture their chips at 45 nm instead of using bleeding edge manufacturing technology. This plays into the lifetime of the part, including by increasing the part’s durability in the hostile environment of automobile, as well as reductions in things like soft error rates, among others.

415. A chip designer may also want to intentionally design a lower performance chip in terms of compute because it consumes less power and current. This reduces thermal problems and/or increases the ability to run on battery or other limited power resources.

416. My opinion is consistent with the evidence I have reviewed from this case. For example, Qualcomm’s CEO, Cristiano Amon testified that [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] Mr.

Amon further testified that [REDACTED]

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

417. As another example, Arm’s Senior Vice President and General Manager of the IoT line of business, Paul Williamson testified that [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

418. As another example, Arm’s SVP of Technology, Peter Greenhalgh testified that

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

419. Thus, in my opinion, Mr. Posner’s assumption that Arm’s implementation cores underperform Qualcomm’s Nuvia-based custom cores is flawed for the additional reason that Mr. Posner does not account for the many factors, besides the RTL, that can affect the performance of an SoC.

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

RESERVATION OF RIGHTS

This expert report reflects my opinions given in good faith with respect to the information available to me as of the date I executed it. I respectfully reserve the right to supplement or amend my opinions in response to opinions expressed by Qualcomm’s experts, or in light of any additional evidence, testimony, or other information that may be provided to me after the date of this expert report, including at trial. In addition, I expect that I may be asked to testify in rebuttal as to issues that may be raised in the expert reports of Qualcomm’s experts, or to issues that may be raised by Qualcomm’s fact witnesses and experts at trial.

Should additional information be produced that may require me to amend or supplement my opinions, I reserve the right to do so.

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct.

DATED: September 5, 2025

By:

A handwritten signature in dark ink, appearing to read "Michael C. Brogioli", is written over a horizontal line.

Michael C. Brogioli, Ph.D.

Exhibit 1

Michael C. Brogioli, Ph.D.

**Contact
Information**

Michael C. Brogioli, Ph.D.
Polymathic Consulting
111 Congress Avenue, Suite 500
Austin, TX 78701 USA

Office: (737) 317-2301
Cell (preferred): (713) 732-0217
Fax: (512) 469-6306
E-mail: michael@polymathicconsulting.com

Education

Rice University, Houston, Texas USA

Ph.D., Electrical and Computer Engineering, 2007

- Dissertation Topic: "Reconfigurable Heterogeneous DSP/FPGA Based Embedded Architectures for Numerically Intensive Embedded Computing Workloads."
- Advising Committee: Dr. Joseph R. Cavallaro, Dr. Keith D. Cooper, Dr. Scott Rixner

Rice University, Houston, Texas USA

M.S., Electrical and Computer Engineering, 2003

- Dissertation Topic: "Dynamically Reconfigurable Data Caches in Low Power Computing."
- Advising Committee: Dr. Keith D. Cooper, Dr. Scott Rixner, Dr. Robert Jump

Rensselaer Polytechnic Institute, Troy, New York USA

B.S., Electrical Engineering, Cum Laude, 1999

- Advisor: Dr. William Pearlman

Certificates

Harvard Business School, Boston, Massachusetts, USA

Certificate in Investment Portfolios with Alternate Investments, 2022

- Venture Capital, Growth Equity, Distress Investing, Private Debt, Hedge Funds, Portfolio Construction.

**Professional
Experience**

Polymathic Consulting, TX USA

Managing Director

2011 - Present

Founder and managing director of Polymathic Consulting, servicing clients ranging from early stage technology start-up endeavors to Fortune 100 and beyond. Clients turn to Polymathic for expansive, proven engineering, research and development, intellectual property and technical leadership to effectively advance their real world business needs.

IEEE and ACM Design Automation Conference, USA

Steering Committee

Conference Chair, Embedded Systems and Software Track

2016 - Present

Design Automation Conference is the premiere technical conference and trade show specializing in Hardware, Software, Internet of Things, Embedded Systems and related Design Methodologies. Conference chair, responsible for the review, critique, and acceptance of academia and industry based publications in the areas of embedded systems, embedded software, and embedded system design.

Rice University, TX USA

Adjunct Professor, Electrical and Computer Engineering

2009 - Present

Professor of Ph.D. candidate level courses in wireless telecommunications, embedded computing software, embedded computing hardware, and software/hardware optimization in modern computing systems utilizing modern high level programming languages. Advisor of senior and graduate student based projects revolving around multi-core heterogeneous systems as they pertain to wireless telecommunications, medical and video.

University of Texas, Austin, TX USA

Guest Lecturer, School of Engineering

2021 - Present

Guest lecturer in “Legal Issues and Technology Management”, on subjects relating to technology, management, financial and fund raising matters, technology transfer, and certain legal issues. Students are primarily comprised of those with existing degrees, and a number of years of industry experience.

RISC-V Foundation, Berkeley, CA USA

Technical Committee

2018 - Present

RISC-V is an open CPU instruction set architecture (ISA) based on established reduced instruction set computing (RISC) principles. The RISC-V Foundation is a non-profit consortium chartered to standardize, protect, and promote the free and open RISC-V instruction set architecture together with its hardware and software ecosystem for use in all computing devices.

Freescale Semiconductor, TX USA

Chief Architect, Senior Member Technical Staff

2009 - 2011

Technical architect of Freescale’s DSP compilers and related technology. Responsible for management of technology, engineering roadmaps, design lead on compiler infrastructure and optimizations (high level and low level), next generation ABI definitions and next generation architecture solutions. Technical lead on multi-year engagement with processor architects in design of next generation DSP cores. Developed software infrastructure for migrating OEM competitor software stacks to Freescale solutions, tools generation, software packages, migration strategies and white papers. Technical lead on Tier-1 OEM customer relationships, evaluations of 3rd party technologies for potential partnerships and acquisitions, led various university research collaborations on behalf of Freescale. Development and deployment of internal software engineering policies and practices.

Freescale Semiconductor, TX USA

Senior Compiler Engineer V

High Performance Compiler Design, Processor Architecture

2007 - 2009

Team leader on compiler engineering effort to provide intuitive, interactive end user experience for DSP compiler tool suite. Designed a framework to guide users in achieving highly optimized compiled VLIW code. Assembly listing reports for optimization failure advice, porting advice when migrating from competitor architectures, advice on code modifications for optimization enablement. Lead designer, engineering effort director, project planning and scoping, release schedule, and drafting of specification. Development of various compiler optimizations for VLIW processing as well as software emulation layers for running competitor software solutions on Freescale silicon.

Advising of next-gen DSP core architecture team in creating a highly orthogonal, compiler targetable multi-clustered VLIW based digital signal processor architecture. Work with future basestation architecture teams on designing next-gen basestation architecture for 4G LTE incorporating control and data plane processing with appropriate programming models.

Method Seven, MA USA

Technical Co-Founder

High Performance Software and Hardware Systems Architecture

2006 - 2007

Founded Method Seven, a financial engineering company applying biologically inspired machine learning to financial market analysis. Principal software systems architect and hardware systems architect for both research and deployment platforms. Led research and development of platform for scans and overlays covering the NASDAQ, NYSE, and AMEX markets using proprietary technologies.

Texas Instruments, TX USA

Advanced Architecture and Chip Technologies

Microprocessor and Systems Architecture

2005

System modelling and architectural exploration of Davinci™ system-on-chip (SOC) architecture designed for embedded video processing. SystemC based simulation models of on-chip crossbars, bus arbitration and bridge technology, as well as on-chip and off-chip memory controllers within application specific heterogeneous SOC architectures.

Fulbright and Jaworski LLP, TX USA

Scientific Advisor, Intellectual Property

Electrical, Computer Engineering and Computer Science

2005 - 2007

Intellectual property consultant and technology advisor on litigation and prosecution work including, but not limited to: CDMA2000 3G wireless standards, wireless communications systems, embedded computing, and large scale modular software systems. Reverse engineering of source code varying from VHDL to high level object oriented applications, as well as patent prosecution and litigation work.

Intel Corporation, CA USA

Microprocessor Research Labs

Compiler Engineering

2000

Implemented speculative multi-threading support in Intel's IA-64 compiler. Developed new program analysis and back end code generation phases to support speculatively launching threads at runtime. Analyzed the performance potentials of SPEC95 benchmarks with respect to speculatively multi-threaded execution.

Rice University, TX USA

Computer Architecture and Circuit Design (Instructor)

2000 - 2003

Graduate instructor of graduate and undergraduate curriculum in the areas of Electrical and Computer Engineering, specifically relating to Computer Architecture and Circuit Design. Advised student projects, instructed classes and led laboratory work.

Vicarious Visions, NY USA

Lead Software Engineer

1999

Principal engineer on Activision's "AMF Extreme Bowling" for Nintendo's Color Gameboy gaming console. Developed PC based audio and graphics development tools suite for use with Color Gameboy game production. Coded innovative, highly optimized assembly routines for real time speech and full motion video on the console's limited Zilog Z80 processor resources.

Stratus Computer, MA USA

Hardware Engineering

1997 - 1998

Debugged locked step CPU operation and memory management issues in Stratus' fault tolerant UNIX release 3.4. Qualified Hewlett Packard PA-8000 series CPU modules under Stratus' proprietary OS release, VOS 14.0, during alpha and beta test phases. Wrote C code and UNIX shell scripts for recreating documented system failures, and to automate remote kernel updates and OS installs as well as data logging.

Rensselaer Polytechnic Institute, NY USA

Digital Microelectronics Design (Instructor)

1997 - 1998

Undergraduate instructor of undergraduate courses in digital microelectronics and circuit design. Instructed weekly lessons, computer design labs, graded exams and problem sets.

Rensselaer Electric Motor Sports, NY USA

Hardware and Software Engineering

1995 - 1997

This project was funded by, and led by, General Motors Corporation and Honda of America. Hardware and software co-design of embedded operating system and hardware platform for electrical vehicle prototypes, running on 16-bit Motorola 68K dual processor platform. Designed power engineering test platform for dynamometers, including hardware and user interface software.

**Appointed
Conference
Committees and
Organizations**

IEEE International Conference on Communications, USA
Technical Review Committee, Machine Learning for Communications Track **2021 - Present**
 Technical committee member responsible for the review, critique, and acceptance of academia and industry based publications and research in the areas of machine learning for communications systems.

IEEE International Symposium on Circuits and Systems, USA
Technical Review Committee **2021 - Present**
 Technical committee member responsible for the review, critique, and acceptance of academia and industry based publications and research in the areas of computing, including energy aware systems, multicore processing, and adaptive computing.

IEEE and ACM Design Automation Conference, USA
Technical Steering Committee, Embedded Computing Track **2019 - Present**
 Technical Steering Committee member responsible for the review, critique, and acceptance of academia and industry based publications and research in the area of embedded computing and related systems, including embedded hardware, embedded software, firmware and tools.

IEEE and ACM Design Automation Conference, USA
Co-chair, Program Committee, Embedded Systems and Software Track **2014 - 2019**
 Co-chair and Program Committee member responsible for the review, critique, and acceptance of academia and industry based publications in the areas of embedded systems, embedded software, and embedded system design. Design Automation Conference is an annual technical conference and trade show specializing in electronic systems.

IEEE and ACM Design Automation Conference, USA
Program Committee, Designer and User Track **2011 - Present**
 Program Committee member responsible for the review, critique, and acceptance of academia and industry based publications in the areas of automated system design, both of hardware, software, and system analysis. Design Automation Conference is an annual technical conference and trade show specializing in electronic systems.

ACM Great Lakes Symposium on VLSI, Stresa-Lago Maggiore, Italy
Program Committee **2007**
 Reviewer and committee member in the area of system-on-chip architectures, VLSI design, and compiler driven architecture design space exploration.

IEEE International Symposium on Personal Indoor and Mobile Radio Communications, Helsinki, Finland
Program Committee **2006**
 Reviewer and committee member in the area of personal and mobile area radio communications and related systems.

ACM International Conference on Parallel Architectures and Compilation Techniques, Charlottesville, VA, USA
Program Committee **2002**
 Reviewer and committee member in the area of parallel computer architectures, programming languages and related compiler technologies.

**Books and
Contributed
Chapters**

Brogioli, Michael C., and Kraeling, Mark B., *Internet of Things - A Synopsis of the Internet of Things, its History, Application, Technology, Architecture, and Challenges Moving Forward*, Software Engineering for Embedded Systems - Methods, Practical Techniques and Applications, 2nd Edition, Elsevier Publishing, 2019.

Brogioli, Michael C., *Software and Compiler Optimization for Microcontrollers, Embedded Processors and DSPs*, Software Engineering for Embedded Systems - Methods, Practical Techniques and Applications, 2nd Edition, Elsevier Publishing, 2019.

Brogioli, Michael C., *Embedded and Multicore System Architecture - Design and Optimization*, Software Engineering for Embedded Systems - Methods, Practical Techniques and Applications, 2nd Edition, Elsevier Publishing, 2019.

Leotescu, Florin, and Cristian, Marius and Brogioli, Michael C., *Performance Analysis using NXP's i.MX RT1050 Crossover Processor and the Zephyr Real-Time Operating System*, Software Engineering for Embedded Systems - Methods, Practical Techniques and Applications, 2nd Edition, Elsevier Publishing, 2019.

Wu, Michael and Sun, Yang and Wang, Guohui and Brogioli, Michael C. and Cavallaro, J. R., *Implementation of a High Throughput 3GPP Turbo Decoder on GPU Architectures*, Software Development for Networking Applications – Expert Guides Series, Elsevier Publishing, Atlanta, GA, 2018.

Brogioli, M. C., *On The C++ Programming Language for Embedded Software, Systems, and Platforms*, Software Engineering for Embedded Systems – Expert Guides Series, Elsevier Publishing, Atlanta, GA, 2013.

Brogioli, M. C., *Software Optimizations for Memory Performance in Embedded Systems*, Software Engineering for Embedded Systems – Expert Guides Series, Elsevier Publishing, Atlanta, GA, 2013.

Invited Co-Author, *Signal Processing Systems Handbook, Second Edition*, Springer Publishing Company, 11 West 42nd Street, New York, NY, 2012.

Brogioli, M. C., *Software Programmable DSP Architectures*, Expert Guide DSP for Embedded and Real-Time Systems, pp. 63-75, Elsevier Publishing, Atlanta, GA, 2012.

Brogioli, M. C., *The DSP Hardware / Software Continuum*, Expert Guide DSP for Embedded and Real-Time Systems, pp. 103-113, Elsevier Publishing, Atlanta, GA, 2012.

Brogioli, M. C., *DSP Optimization - Memory Optimization*, Expert Guide DSP for Embedded and Real-Time Systems, pp. 217-241, Elsevier Publishing, Atlanta, GA, 2012.

Brogioli, M. C. and Dew, Stephen, *Optimizing DSP Software - High level Languages and Programming Models*, Expert Guide DSP for Embedded and Real-Time Systems, pp. 167-179, Elsevier Publishing, Atlanta, GA, 2012.

Sun, Yang, Amiri, Kiarash, Brogioli, Michael, Wang, Guohui, and Cavallaro, Joseph R., *DSP Hardware Accelerator Architectures for Communication Applications*, Springer Publishing, New York, NY, Spring 2012.

Sun, Yang, and Amiri, Kiarash, and Brogioli, Michael C., and Cavallaro, Joseph, *Application-Specific Accelerators for Communications*, Springer Publishing Company, 11 West 42nd Street, New York, NY, 2010.

Invited Co-Author, *Signal Processing Systems Handbook, First Edition*, Springer Publishing Company, 11 West 42nd Street, New York, NY, 2010.

Publications and Invited Papers Brogioli, Michael, C., and Games, William, and Moats, Richard, *Current and Future Challenges in Internet of Things (IoT) Development Silos (Part I)*, Embedded Computing Design Magazine,

USA, 2020.

Brogioli, Michael, C., and Games, William, and Moats, Richard, *On Solving the IoT Development Silo Problem* IEEE Real-Time and Embedded Technology and Applications Symposium, Tools and Demos Session, Montreal, Canada, 2019.

Moats, Richard, and Games, Bill, and Brogioli, M. C., *Arch - A New Language For The Next Wave of Network-Connected Embedded Development*, Design Automation Conference, Austin, Texas, 2017.

Moats, Richard, and Games, Bill, and Brogioli, M. C., *Network Native - The Next Wave of Connected Embedded Development*, Network Native Inc., Austin, Texas, 2017.

Invited Paper, Arokia I, Brogioli, Michael, Jain, Nitjin and Garg, Umang, *LTE Layer 1 Software Design on Heterogeneous Multicore DSP Platforms*, IEEE 45th Asilomar Conference on Signals, Systems and Computers, Pacific Grove, CA, 2011.

Kyriakopoulos, Konstantinos, Brogioli, Michael C., and Zhang, Ruihao, *Improving Software Systems Quality through Well Defined Development Methodologies*, 2011 Test Methodology and Efficiency Symposium, Freescale Semiconductor, Austin, TX, USA, 2011.

Brogioli, Michael C., and Cavallaro, J.R., *Compiler Driven Architecture Design Space Exploration for Embedded DSP Workloads: A Study in Software Programmability Versus Hardware Acceleration*, IEEE 43rd Asilomar Conference on Signals, Systems and Computers, Pacific Grove, CA, 2009.

Brogioli, Michael C., and Zhang, Ruihao, *Compiler Feedback: Guiding Performance of Compiled C Code*, Freescale Semiconductor White Paper, Austin, TX, 2009.

Brogioli, M.C., and Cavallaro, J., *RISD: A Retargetable Compiler Infrastructure for Scalable Multi-Clustered VLIW DSP Architectures*, IEEE 5th Dallas Circuits and Systems Workshop, Dallas, TX, 2007.

Brogioli, Michael C., Radosavljevic, P., and Cavallaro, J., *A General Hardware/Software Codesign Methodology for Embedded Signal Processing and Multimedia Workloads*, IEEE 40th Asilomar Conference on Signals, Systems, and Computers, Pacific Grove, CA, 2006.

Brogioli, Michael C., Radosavljevic, P., and Cavallaro, J., *Hardware/Software Co-design Methodology for DSP/FPGA Partitioning: A Case Study for Meeting Real-Time Processing Deadlines in 3.5G Mobile Receivers*, 49th IEEE International Midwest Symposium on Circuits and Systems, San Juan, Puerto Rico, 2006.

Brogioli, Michael C., Willmann, P.D., and Rixner, S., *Parallelization Strategies for Network Interface Firmware*, IEEE/ACM 4th Annual Workshop on Optimizations for DSP and Embedded Systems (In Conjunction with IEEE/ACM International Symposium on Code Generation and Optimization), Manhattan, NY, 2006.

Brogioli, Michael C., Gadhiok, M., and Cavallaro, J., *Design and Analysis of Heterogeneous DSP/FPGA Based Architectures for 3GPP Wireless Systems*, IEEE Real-Time and Embedded Technology and Applications Symposium Work-in-Progress Sessions, San Jose, CA, 2006.

Brogioli, Michael C., and Cavallaro, J., *Modelling Heterogeneous DSP-FPGA Based System Partitioning with Extensions to the Spinach Simulation Environment*, IEEE 39th Asilomar Conference on Signals, Systems, and Computers, Pacific Grove, CA, 2005.

Joseph R. Cavallaro, Michael C. Brogioli, Alexandre de Baynast, and Predrag, Radosavljevic, *Re-*

configurable Architectures for Wireless Systems: Design Exploration and Integration Challenges, Wireless World Research Forum, Toronto, CA, 2004.

Brogioli, Michael C., Pai, V.S., Willmann, P.D., *Spinach: A Liberty-Based Simulator For Programmable Network Interface Architectures*, ACM SIGPLAN/SIGBED Conference on Languages Compilers and Tools for Embedded Systems, San Diego, CA, 2004.

Brogioli, Michael C., *Dynamically Reconfigurable Data Caches in Low Power Computing*, Masters Thesis, Rice University, Houston Texas, 2002.

Brogioli, Michael C., and Jones, Bryan, *Dynamically Configurable Caches in Low Power Computing*, Internal White Paper, Rice University, Houston Texas, 2001.

Patents

Gregory D. Chiocco and Michael C. Brogioli, *Generalized, Hierarchical, Multimodal Event Detection*, U.S. Provisional Patent Application 63/801,591.

Gregory D. Chiocco and Michael C. Brogioli, *Systems and Methods for Connected Computation in Network Constrained Systems*, U.S. Patent Application 19/065,739.

Gregory D. Chiocco and Michael C. Brogioli, *Systems and Methods for Connected Computation in Network Constrained Systems*, U.S. Patent Application 18/242,483.

Gregory D. Chiocco and Michael C. Brogioli, *Systems and Methods for Obtaining Location Data*, U.S. Patent Application 18/807,970.

Gregory D. Chiocco and Michael C. Brogioli, *Systems and Methods for Aggregating Harvest Yield Data*, U.S. Patent No. 11,854,094.

Gregory D. Chiocco and Michael C. Brogioli, *Systems and Methods for Obtaining Location Data*, U.S. Patent No. 12,066,838.

Donald W. Games, Michael C. Brogioli Ph.D., Richard Moats, *System And Method for Holistic Application Development and Deployment in a Distributed Heterogeneous Computing Environment*, U.S. Patent Application 17/745,792, filed May 2022. Patent Pending.

Gregory D. Chiocco and Michael C. Brogioli, *Systems and Methods for Connected Computation in Network Constrained Systems*, U.S. Patent No. 11,750,701.

Gregory D. Chiocco and Michael C. Brogioli, *Systems and Methods for Traversing A Three Dimensional Space*, U.S. Patent No. 11,526,180.

Gregory D. Chiocco and Michael C. Brogioli, *Systems and Methods for Aggregating Harvest Yield Data*, U.S. Patent No. 11,354,757.

Donald W. Games, Michael C. Brogioli Ph.D., Richard Moats, *System And Method for Holistic Application Development and Deployment in a Distributed Heterogeneous Computing Environment*, U.S. Patent No. 11,340,887.

Michael C. Brogioli, Ph.D., Cesar Taylor M.D., and Howard Roberts, *Location Agnostic Platform for Medical Condition Monitoring and Prediction and Method of Use Thereof*, Patent No: 147145.010100/US, 2014.

Cesar Taylor M.D., and Michael C. Brogioli Ph.D., and Howard Roberts, *System for Holistic Pain Monitoring and Prediction and Method of User Thereof*, Patent No: 147145.010200/US, 2014.

Cesar Taylor M.D., and Michael C. Brogioli Ph.D., and Howard Roberts, *System for Prevention of Narcotic Diversion and Method of Use Thereof*, Patent No: 147145.010300/US, 2014.

Howard Roberts, Cesar Taylor M.D., and Michael C. Brogioli Ph.D., *Magnetometer Breathing Sensor and Method of User Thereof*, Patent No: 147145.010400/US, 2014.

**Leadership and
Board
Membership**

Tandem Motion Company FL, USA

Advisory Board

2021 - 2023

Advisory board member on intellectual property strategy, fundraising, finance and select technologies. Tandem is building hybrid solutions for heavy duty internal combustion engine vehicles.

AgCompute CA USA

Advisory Board, Co-Inventor

2019 - Present

Advisory board and co-inventor of patent pending technology for the advancement of Agriculture Technology in areas of low network connectivity and adverse conditions. Innovative sensor, edge and cloud computing solutions for in-field real time asset management.

MIT MassChallenge USA

Mentor, Speaker

2017 - Present

MassChallenge is a global startup accelerator with a focus on high-impact, early-stage entrepreneurs. Through its global network of accelerators in Boston, London, Mexico City, Geneva, Jerusalem and Texas, coupled with unrivaled access to our corporate partners, MassChallenge has driven growth and created value the world over. To date, MassChallenge has raised over \$2B in funding, generated over \$900M in revenue, and created over 65,000 jobs.

ScribeSense, TX USA

Board of Directors

2017

ScribeSense is a *patented* cloud-based grading platform for schools and the only solution for grading free-form paper tests. ScribeSense automatically grades handwritten tests with 99% accuracy. Teachers scan and upload their own tests using a standard school scanner. ScribeSense's visual analytics enables data-driven decision making so schools can improve student learning and retain top teacher talent.

Southwest Angel Network for Social Impact, TX USA

Board of Directors

2015 - 2019

The Southwest Angel Network for Social Impact (SWAN Impact) is a community of like-minded investors who enjoy working together to *Make the world a better place, one company at a time*. We believe that we can have the most significant impact by funding for-profit start-up companies who are building sustainable businesses.

Network Native, TX USA

Board of Directors, Co-Founder, CTO

2015 - Present

Board member and co-inventor, advising in the areas of Internet of Things technologies, specifically related to product developer solutions, programming languages and platforms, security and infrastructure. Business development, marketing, and fund raising. Have held various roles, including but not limited to CTO.

NewCrew, TX USA

Advisory Board

2015 - 2016

Board member advising in the areas of mobile computing, social computing, and geofencing technologies. Business development, marketing, and fund raising.

AngelSpan, TX USA

Advisory Board

2015 - 2016

Board member advising in the areas of professional investor relations to start-ups, resource allocation, and a platform for increased efficiency and valuation of early stage companies and venture capital portfolios.

Vault (acquired by Summer PBC), TX USA

Advisory Board, Interim CTO

2013 - 2015

Advisory board member and interim CTO advising in the areas of financial transactions systems and enterprise software, as they pertain to solving the student loan debt crisis for early stage science, technology, engineering and medicine (STEM) employees. Technology, recruiting, fund raising. Vault was acquired by Summer PBC in 2024.

HealthBits, TX USA

Board Member, Co-Inventor

2013 - 2014

Board member advising in the areas of large scale enterprise software systems, real-time computing and medical sensing devices across complex event processing systems.

OsmeK, TX USA

Interim CTO, Advisory Board

2012 - 2014

Interim CTO and board member advising in the areas of large scale cloud based content management software systems. Providing innovative media content management for heterogeneous web enabled devices with geolocation services, primarily using PHP and Python programming languages.

Academia

Rice University, Houston, Texas USA

DSP Compiler Design

2005 - 2009

Developed *RISD*, a retargetable compiler infrastructure for clustered VLIW DSP architectures. By taking pre-existing code schedules and binaries for existing DSP applications, RISD takes a flexible machine definition for which the code should be recompiled. Users can specify the number of VLIW clusters, functional units per VLIW cluster, functional unit mix per VLIW cluster, register file sizes, cluster interconnect topology (point-to-point versus 2d mesh network), multi-cluster scheduling algorithms, and inter-cluster cross-register file bandwidth and latencies.

Compiler framework was used to perform compiler driven design space exploration of massively multi-clustered VLIW based architectures versus FPGA and ASIP implementations of software kernels. RISD was used in studies comparing tradeoffs in computational throughput versus gates required to implement programmable DSP cores containing many register files and VLIW compute clusters, versus FPGA efficiency when including routing overhead for large scale problems.

Rice University, Houston, Texas USA

DSP/FPGA Based System-On-Chip Architectural Simulator Design

2004 - 2009

Developed *Spinach DSP-FPGA*, a modular and composable simulator design infrastructure for programmable and reconfigurable embedded SOC architectures. Designed and developed modular and composable software modules to bit-true, cycle accurately simulate Texas Instruments C62x and C64x DSPs and MIPS style processors. Additionally, designed and developed support for SRAM and DRAM style memories, heterogeneous memory systems, heterogeneous clock domains, as well as runtime reconfigurable Xilinx Virtex II based FPGA computing elements, cache and memory controllers, bus arbiters, and on-chip interconnect fabric.

System was validated against compiled code DSP firmware from Texas Instruments' Code Composer Studio running on the simulator versus actual hardware benchmarks. Simulation platform was used to investigate highly heterogeneous multi-processor DSP based SOC architectures containing one or more Xilinx style FPGA based hardware coprocessors. Studies in 3.5G wireless telecommunications as well as H.26x video processing were performed to gain insight into overall system bottlenecks, hardware and software partitioning strategies, and tradeoffs of overall system design.

Rice University, Houston, Texas USA

Programmable Network Interface Architecture Simulator Design

2002 - 2004

National Science Foundation Grant Nos. CCF-0532448 and CNS-0532452

Developed *Spinach*, a simulator design toolset for modelling programmable network interface architectures. Spinach models system components common to all programmable environments (ALUs, control and data paths, register files, instruction processing), as well as components specific to embedded computing (software controlled SRAM scratchpad memory, hardware assists for DMA and medium access control). Spinach is a simulator design infrastructure, rather than a simulator per se. As such, the same underlying C code framework is used to model a uniprocessor Gigabit network interface, a multi-processor Gigabit network interface, or a 10 Gigabit multi-processor network interface with highly heterogeneous memory systems. Only a small number of lines of high level scripting language code is required to describe each of the various systems.

Spinach was validated by modeling the Tigon-2 programmable Ethernet controller by Alteon Websystems, running actual compiled code Ethernet processing firmware and by comparing the reported results to actual hardware benchmarks. Spinach was also used to obtain new insights into the performance of Gigabit and 10 Gigabit network interfaces both in terms of hardware architecture and firmware parallelization strategies. *Public Website: <https://sourceforge.net/projects/spinach/>*

Rice University, Houston, Texas USA

Software Engineering and Consulting

2000

Implemented instruction selection and register allocation optimizations in UHFFT, an adaptive and portable software library for the Fast Fourier Transform. Performed in depth analysis of register pressure, compiler generated spill code, memory hierarchy utilization, and instruction selection for non-trivially sized FFT matrices running on commercially available hardware platforms. Utilized reverse Cuthill-McKee technique to achieve near optimal computation orderings and minimize live data set sizes, as well as optimize register allocation and instruction selection phases of compilation.

Select Expert
Witness,
Consultant
Engagements

RFCyber Corp.* v. Starbucks Corporation

RFCyber Corp.* v. The Kroger Co

RFCyber Corp.* v. Volkswagen Ag, et al.

Fabricant LLP, NY, USA

Expert Witness in Mobile Devices, Payments and Security

2025 - Present

Case Subject Matter - Mobile devices and network communications in a multi-tier security model relating to mobile payments.

Work Performed - Expert consulting, claim construction declaration (to date).

Yealink (USA) Network Technology Co. Ltd., and Yealink Network Technology Co. Ltd v. Barco, Inc. et al.*

K&L Gates LLP, CA, USA

Expert Witness in Wireless Communications Systems

2025 - Present

Case Subject Matter - Wireless communications systems and computer peripherals for content sharing.

Work Performed - Expert consulting, IPR declarations (to date).

Qualcomm Inc. v. Arm Holdings PLC*

Kirkland & Ellis LLP, USA

Expert Witness in Microprocessor Design and Validation

2025 - Present

Case Subject Matter - Computer microprocessor design and validation.

Work Performed - Expert consulting (to date).

Netlist, Inc.* v. Micron Technology, Inc., Micron Semiconductor Products, Inc., Micron Technology Texas LLC

Irell & Manella LLP, CA, USA

Expert Witness in HBM Computer Memory Technology **2025 - Present**
Case Subject Matter - Expert Witness in computer memory modules and high storage capacity HBM memory technology.
Work Performed - Expert consulting (to date).

BMW of North America LLC* v. Foras Technologies Ltd.
Finnegan, Henderson, Farabow, Garrett & Dunner, LLP, GA, USA
Expert Witness in Fault Tolerant Multiprocessor Systems **2024 - Present**
Case Subject Matter - Fault tolerant recovery in multiprocessor system architectures.
Work Performed - Expert consulting, multiple IPR declarations and depositions (to date).

Barco, Inc. et al.* v. Yealink (USA) Network Technology Co. Ltd
K&L Gates LLP, CA, USA
Expert Witness in Wireless Communications Systems **2024 - Present**
Case Subject Matter - Wireless communications systems and computer peripherals for content sharing.
Work Performed - Expert consulting, claim construction declarations, depositions (to date).

HL Klemove Corp.* v. Foras Technologies Ltd.
Arnold & Porter Kaye Scholar LLP, CA, USA
Expert Witness in Multiprocessor Systems **2024**
Case Subject Matter - Fault tolerant recovery in multiprocessor system architectures.
Work Performed - Expert consulting, expert declaration.

Labrador Diagnostics LLC* v. Biofire Diagnostics, LLC and Biomerieux, S.A.
Irell & Manella LLP, CA, USA
Expert Consulting in Medical Device Software and Systems **2024 - Present**
Case Subject Matter - Consultant in medical testing equipment hardware, software and computer networking technology.
Work Performed - Expert consulting, reverse engineering, declarations (to date).

Mercedes-Benz USA, LLC v. Daedalus Prime LLC*
Ascenda Law Group, CA, USA
Expert Witness in Multicore Systems, Memory and Power Mgmt **2024 - 2025**
Case Subject Matter - Dynamic power management in heterogeneous CPU/GPU systems, interconnects and memory systems.
Work Performed - Expert consulting, multiple IPR declarations, multiple depositions.

Samsung Electronics Co., LTD v. Headwater Research LLC*
Russ, August, and Kabat LLP, Los Angeles, CA, USA
Expert Witness in Computer Networking Technology **2024 - Present**
Case Subject Matter - Wireless/cellular networking technology as it relates to mobile devices and messaging.
Work Performed - Expert consulting, IPR declaration, depositions.

Samsung Electronics Co., LTD v. Headwater Research LLC*
Russ, August, and Kabat LLP, Los Angeles, CA, USA
Expert Witness in Wireless Networking Technology **2024**
Case Subject Matter - Wireless networking technology as it relates to mobile devices and secure communication.
Work Performed - Expert consulting, IPR declaration.

SEVEN Networks, Inc.* v. Motorola Mobility LLC
McKool Smith LLP, NY, USA

Expert Witness in Mobile Device Power Management **2023 - 2024**
Case Subject Matter - Power management hardware and software systems in mobile devices.
Work Performed - Expert consulting, expert reports, deposition.

Viasat, Inc. v. Western Digital Techs., Inc*
Gibson, Dunn & Crutcher, LLP, CA, USA
Expert Witness in Computer Memory Technology **2023 - 2024**
Case Subject Matter - Error correction technology for non-volatile memory, and non-volatile memory system design.
Work Performed - Expert consulting.

Valtrus Innovations LTD* v. SAP America, Inc. and SAP, SE
Reichman Jorgensen LLP, CA, USA
Expert Witness in Multiprocessor Systems and Caching Technology **2023 - 2025**
Case Subject Matter - Multiprocessor systems, computer architecture, cache and memory systems, secure computing.
Work Performed - Expert consulting, expert declarations, depositions.

Valtrus Innovations LTD* v. AT&T Inc., et al
Reichman Jorgensen LLP, CA, USA
Expert Witness in Multiprocessor Systems and Caching Technology **2023 - 2024**
Case Subject Matter - Multiprocessor systems, dynamic cache partitioning and related technology.
Work Performed - Expert consulting, claim construction declarations, deposition, Markman hearing tutorials.

BMW of North America LLC* and Robert Bosch LLC* v. Foras Technologies Ltd.
Finnegan, Henderson, Farabow, Garrett & Dunner, LLP, GA, USA
Expert Witness in Multiprocessor Systems **2023 - Present**
Case Subject Matter - Fault tolerant recovery in multiprocessor system architectures, including firmware related functionality.
Work Performed - Expert consulting, expert IPR declarations, depositions (to date).

Sonrai Memory Limited* v. Micron Technology, Inc.
BC Law Group PC, NY, USA
Expert Witness in Volatile and Non-Volatile Memory Technology **2023 - 2024**
Case Subject Matter - Expert Witness in volatile and non-volatile memory technology, including power systems.
Work Performed - Expert consulting, expert reports, depositions.

Micron Technology Inc. v. Sonrai Memory Limited*
BC Law Group PC, NY, USA
Expert Witness in Volatile and Non-Volatile Memory Technology **2023 - 2024**
Case Subject Matter - Expert Witness in volatile and non-volatile memory technology, including power systems.
Work Performed - Expert consulting, multiple IPR declarations, multiple depositions.

AGIS Software Development, LLC* v. Samsung Electronics Co., Ltd. et. al
Fabricant LLP, NY, USA
Expert Witness in Mobile Devices and Systems **2023 - 2024**
Case Subject Matter - Expert Witness in mobile devices and location tracking software and systems.
Work Performed - Expert consulting.

Samsung Electronics Co. Ltd. and Samsung Semiconductor, Inc. v. Netlist, Inc.*
Netlist, Inc.* v. Google LLC, Alphabet Inc., Samsung Electronics Co., Ltd.

and Samsung Semiconductor, Inc.

Irell & Manella LLP, CA, USA

Expert Witness in Computer Memory and Module Architecture

2023

Case Subject Matter - Expert Witness in computer memory module architecture, self testing, DRAM and related technologies.

Work Performed - Expert consulting, claim construction declaration, deposition.

Netlist, Inc.* v. Micron Technology, Inc.; Micron Semiconductor Products, Inc.; Micron Technology Texas LLC

Irell & Manella LLP, CA, USA

Expert Witness in Computer Memory and Module Architecture

2023 - Present

Case Subject Matter - Expert Witness in computer memory modules, high capacity HBM technology, and issues relating to performance and power.

Work Performed - Expert consulting, expert reports, depositions (to date).

Samsung Electronics Co., Ltd v. Netlist, Inc*

Irell & Manella LLP, CA, USA

Expert Witness in Computer Memory

2022 - 2023

Case Subject Matter - Expert Witness in multiple IPRs related to high bandwidth stacked memory architectures.

Work Performed - Expert consulting, IPR declarations, depositions.

Daedalus Prime LLC* v. Samsung Electronics Co., Ltd. et. al

Bluepeak Law Group LLP, NY, USA

Expert Witness in Dynamic Power Management

2023

Case Subject Matter - Dynamic power management of multicore processors, memory systems and related domains.

Work Performed - Expert consulting.

Certain Semiconductors and Devices and Products Containing the Same, Including Printed Circuit Boards, Automotive Parts, and Automobiles, Inv. No. 337-TA-1332

Daedalus Prime LLC*

Reichman Jorgensen LLP, CA, USA

Expert Witness in Dynamic Power Management

2022

Case Subject Matter - Dynamic power management of multicore processors, memory systems and related domains.

Work Performed - Expert consulting.

Definitive Holdings LLC v. Powerteq LLC*

Proskauer Rose LLP, NY, USA

Expert Witness in Automotive Software and Hardware

2022 - 2023

Case Subject Matter - Automotive engine control software, hardware and related technology.

Work Performed - Expert consulting, declarations.

Aire Technology Ltd.* v. Apple Inc.

Aire Technology Ltd.* v. Google LLC

Aire Technology Ltd.* v. Samsung Electronics Co., Ltd. et. al

Russ, August, and Kabat LLP, Los Angeles, CA, USA

Expert Witness in Computer Hardware Design

2022

Case Subject Matter - Computer hardware design as it relates to Near Field Communication.

Work Performed - Expert consulting, declarations, deposition testimony.

WSOU Investments, LLC* v. ZTE Corporation et. al

Kasowitz Benson Torres LLP, NY, USA

Expert Witness in Video and Telecommunications Computing **2022 - 2023**
Case Subject Matter - Expert Witness in hardware and software design as it relates to video codec technologies and telecommunications processing.
Work Performed - Expert consulting and expert declaration.

Robert Zeidman* v. Lindell Management LLC
Bailey Glasser LLP, Washington DC, USA
Expert Witness in Computer Software and Networking **2022 - 2023**
Case Subject Matter - Expert Witness in computer software and networking as it pertains to voting machines used in the United States 2020 Presidential Election.
Work Performed - Expert consulting, expert reports, testimony at hearing.

Netlist, Inc.* v. Samsung Electronics Co., Ltd. et. al
Irell & Manella LLP, CA, USA
Expert Witness in Computer Memory and Module Architecture **2022 - 2023**
Case Subject Matter - Expert Witness in computer memory modules, high capacity HBM technology, and issues relating to performance and power.
Work Performed - Expert consulting, expert reports, depositions, trial testimony.

Samsung Electronics Co., Ltd v. Netlist, Inc*
Irell & Manella LLP, CA, USA
Expert Witness in Computer Memory **2022 - 2023**
Case Subject Matter - Expert Witness in multiple IPRs related to computer memory module architecture, including DRAM and related technologies.
Work Performed - Expert consulting, IPR declarations, depositions.

Scott and White Health Plan and SHA, LCC d/b/a FirstCare* v. Actian, Corporation
Germer, Beaman & Brown PLLC, TX, USA
Expert Witness in Computer Software **2022 - Present**
Case Subject Matter - Expert Witness in computer software and related licensing and copyright matters.
Work Performed - Expert consulting (to date).

Idan Bar-Asher et. al v. Playtika Holding Corp., et. al Ltd*
Labaton Sucharow LLP, Washington D.C., USA
Expert Witness in Mobile Software and Systems **2022 - 2024**
Case Subject Matter - Expert witness in mobile gaming software and systems development as it relates to federal securities laws and Initial Public Offerings (IPOs).
Work Performed - Expert consulting.

Maxell Ltd* v. Lenovo Group Ltd., et. al
Mayer Brown LLP, Washington D.C., USA
Expert Witness in Power Management **2022 - 2023**
Case Subject Matter - Expert Witness in the area of mobile devices, microprocessors and power management.
Work Performed - Expert consulting.

Q Technologies, Inc.* v. Walmart, Inc.
Q Technologies, Inc.* v. Neutron Holdings, Inc. d/b/a/ LIME
Kane Russell Coleman & Logan PC, TX, USA
Expert Witness in Mobile Payments Systems **2021 - 2024**
Case Subject Matter - Expert Witness in the area of mobile payments processing systems.
Work Performed - Expert consulting, infringement expert reports, depositions.

Samsung Electronics Co., Ltd v. Netlist, Inc*
Gibson Dunn & Crutcher LLP, CA, USA
Expert Witness in Computer Memory **2021 - 2022**
Case Subject Matter - Expert Witness in computer memory module architecture, self testing, DRAM and related technologies.
Work Performed - Expert consulting, IPR declarations, depositions.

Sonrai Memory Limited* v. Oracle Corporation
Russ, August, and Kabat LLP, Los Angeles, CA, USA
Expert Witness in Memory and Compression Technology **2021 - 2022**
Case Subject Matter - Memory controllers, memory technology and data compression technology.
Work Performed - Expert consulting, claim construction, declarations, depositions.

Certain Laptops, Desktops, Servers, Mobile Phones, Tablets, and Components Thereof, Inv. No. 337-TA-1280
Sonrai Memory Limited*
Russ, August, and Kabat LLP, Los Angeles, CA, USA
Expert Witness in Low Power Systems **2021 - 2022**
Case Subject Matter - System on chips, operating systems and system components related power consumption in computing devices.
Work Performed - Expert consulting, claim construction declarations, expert reports, depositions.

Future Link Systems LLC* v. Advanced Microdevices, Inc.
Future Link Systems LLC* v. Apple, Inc
Future Link Systems LLC* v. Broadcom, Inc; Broadcom Corp.
Future Link Systems LLC* v. Qualcomm, Inc.; Qualcomm Technologies
Future Link Systems LLC* v. Realtek Semiconductor Corp.
Russ, August, and Kabat LLP, Los Angeles, CA, USA
Expert Witness in Circuit Design, Interconnects and Test **2021 - 2022**
Case Subject Matter - Semiconductor circuit design and reuse, memory design and test, PCI Express and related interconnect technologies.
Work Performed - Expert consulting, claim construction, declarations, depositions.

Certain UMTS and LTE Cellular Communications Modules and Products and Products Containing the Same, Inv. No. 337-TA-1240
Philips RS North America LLC and Koninklijke Philips N.V.*
Foley & Lardner LLP, MA, USA
Expert Witness in Wireless Computing Technology **2020 - 2021**
Case Subject Matter - Embedded computing technology related to wireless mobile devices, including 3GPP standards based functionality.
Work Performed - Expert consulting, expert reports, deposition, trial testimony.

Acqis* v. Samsung Electronics Co., LTD
Robins Kaplan LLP, USA
Expert Witness in Mobile Devices and Interconnects **2021**
Case Subject Matter - Chip and chipset interconnect technology relating to mobile and non-mobile devices.
Work Performed - Expert consulting, expert reports, depositions.

Neodron Limited* v. Texas Instruments, Inc
Neodron Limited* v. Cypress Semiconductor Corp
Neodron Limited* v. Renesas Electronics Corp
Neodron Limited* v. ST Microelectronics N.V.
Russ, August, and Kabat LLP, Los Angeles, CA, USA

Expert Witness in Touch Screen Technology and Related Systems **2020 - 2021**
Case Subject Matter - Expert witness in hardware/software systems for touch screen technology, including analog and digital signaling and processing.
Work Performed - Expert consulting, declarations.

Qualcomm Inc. v. Monterey Research LLC*
Desmarais LLP, NY, USA
Expert Witness in Memory Systems Technology **2021**
Case Subject Matter - SRAM and DRAM technology, memory system burst functionality and related matters.
Work Performed - Expert consulting, IPR declarations, depositions.

Advanced Micro Devices Inc. v. Monterey Research LLC*
Desmarais LLP, NY, USA
Expert Witness in Memory Systems, Interconnects **2021**
Case Subject Matter - SRAM and DRAM technology, multi-ported memory systems, boot technology and related technologies.
Work Performed - Expert consulting, IPR declarations, depositions.

Analog Devices Inc. v. Xilinx Inc.*
Morrison & Foerster LLP, CA, USA
Expert Witness in FPGAs and Configurable Computing **2020 - 2021**
Case Subject Matter - FPGAs and solutions related to crossbar interconnects, high speed transceivers, and configurable computing.
Work Performed - Expert consulting, IPR declarations, depositions.

TriOptima AB v. Quantile Technologies Limited*
Caldwalader Wickersham & Taft, New York, USA
Expert Witness in Source Code for FinTech Systems **2020**
Case Subject Matter - Software technology implementations of financial services related to compression and derivatives markets.
Work Performed - Expert consulting, source code review.

Unified Patents LLC v. JustService.net LLC*
Sheridan Ross P.C., Colorado, USA
Expert Witness in Virtual Data Storage Systems **2020 - 2021**
Case Subject Matter - Web enabled virtual data storage systems for backup, storing and transferring of data.
Work Performed - Expert consulting, declarations, depositions.

Karya Property Management, LLC* v. ResMan, LLC
Baker Botts LLP, Houston, Texas, USA
Expert Witness in Distributed Software Systems **2020 - 2021**
Case Subject Matter - Expert witness in the areas of distributed software systems, including data base technologies, as they relate to property management software and related systems.
Work Performed - Expert consulting, claim construction, IPR declarations, CBM declarations, depositions, expert reports.

Certain Touch-Controlled Mobile Devices, Computers, and Components Thereof, Inv. No. 337-TA-1193
Neodron Limited*
Russ, August, and Kabat LLP, Los Angeles, CA, USA
Expert Witness in Touch Screen Technology and Related Systems **2020**
Case Subject Matter - Expert witness in hardware/software systems for touch screen technology in

mobile devices.

Work Performed - Expert consulting.

VLSI Technology LLC* v. Intel Corporation

Irell & Manella LLP, Los Angeles, CA USA

Expert Witness in Computer Architecture

2020 - 2021

Case Subject Matter - Expert witness in the area of computer architecture, microprocessors and power management.

Work Performed - Expert consulting and source code review, expert reports, depositions, trial testimony.

Optimum Imaging Technologies LLC* v. Canon Inc.

Ruyak Cherian LLP, Washington D.C., USA

Expert Witness in FPGA Based Image Processing Systems

2019 - 2021

Case Subject Matter - Expert witness and consultant in the area of heterogeneous FPGA/DSP/CPU based systems as applied to image and video processing technology.

Work Performed - Expert consulting, claim construction declarations, expert reports, depositions, IPR declarations.

Dish Network, LLC v. Contemporary Display LLC*

Toler Law Group, P.C., Texas., USA

Expert Witness in Real Time Video Processing

2020

Case Subject Matter - Expert Witness in real-time video processing technology over the Internet, including related user interfaces and quality of service.

Work Performed - Consulting, IPR declarations, deposition.

Dish Network, LLC v. Contemporary Display LLC*

Toler Law Group, P.C., Texas., USA

Expert Witness in Real Time Video Processing

2020

Case Subject Matter - Expert Witness in real-time video processing technology over Internet, including related user interfaces and quality of service.

Work Performed - Consulting, IPR declarations, deposition.

Multimedia Content Management LLC* v. Dish Network LLC

Sheridan Ross P.C., Colorado, USA

Expert Witness in Real Time Video Processing

2019 - 2020

Case Subject Matter - Expert Witness in Internet based real-time video processing set top boxes, and related content processing and distribution.

Work Performed - Expert consulting.

Exegy Inc. et al v. ACTIV Financial Systems, Inc.*

Wolf Greenfield & Sachs P.C., USA

Expert Witness High Speed Computing for Financial Services

2019 - 2021

Case Subject Matter - Expert Witness in microprocessor and FPGA based system design for high speed financial services, high speed RDMA systems, and related technology.

Work Performed - Expert consulting, IPR declarations, depositions.

Certain Touch-Controlled Mobile Devices, Computers, and Components Thereof, Inv. No. 337-TA-1162

Neodron Limited*

Russ, August, and Kabat LLP, Los Angeles, CA, USA

Expert Witness in Touch Screen Technology and Related Systems

2019 - 2020

Case Subject Matter - Expert witness in hardware/software systems for touch screen technology in mobile devices.

Work Performed - Expert consulting, claim construction declaration, expert reports, depositions.

Maxell, Ltd., et al.,* v. Apple Inc.

Mayer Brown LLP, Washington D.C., USA

Expert Witness in Embedded Computer Architecture **2019 - 2021**

Case Subject Matter - Expert witness and consulting engineer in low power computing and power management.

Work Performed - Expert consulting, claim construction declaration, claim construction deposition, expert reports, infringement and validity depositions.

Nuvoton Technology Corporation* v. Microchip Technology Inc.

Finnegan, Henderson, Farabow, Garrett & Dunner, Washington D.C., USA

Expert Witness in Embedded Computer Architecture **2019 - 2020**

Case Subject Matter - Expert witness in embedded memory system hardware, direct memory access engines, memory controllers, and analog/digital and digital/analog ASICs.

Work Performed - Expert consulting, declarations, claim construction deposition, IPR declarations, deposition.

Shuttlewagon Inc.* , v. Innovative Quality Solutions, LLC

Stroz Friedberg, Massachusetts, USA

Expert Witness in Embedded Computing **2019**

Case Subject Matter - Expert witness in Programmable Logic Controllers (PLCs), IEC 61131 IE / CodeSys and real-time computing as it pertains to industrial equipment, as well as misappropriation of proprietary technology.

Work Performed - Expert consulting.

RDM, Inc. v. Citoc Inc.*

Citoc Incorporated, Texas, USA

Expert Witness in Cloud / Web Based Computing **2019**

Case Subject Matter - Expert witness cloud deployed, web based, infrastructure management software and software solutions deployment. Work Performed - Expert consulting.

ResMan, LLC v. Karya Property Management, LLC et al.*

Beck Redden LLP, Texas, USA

Expert Witness in Software Design **2019 - 2021**

Case Subject Matter - Expert witness in trade secret matters related to design and architecture of consumer facing software products.

Work Performed - Expert consulting, expert reports, depositions, trial testimony.

Qualcomm* v. Apple Inc.

Case No. 3:17-cv-02398-DMS-MDD

Quinn Emanuel Urquhart & Sullivan, CA, USA

Expert Witness in Mobile Devices and Computer Architecture **2019**

Case Subject Matter - Expert witness in mobile devices, computer architecture, and software system design for wireless communications.

Work Performed - Expert consulting.

Vasu Networks Corporation*

Skiermont Derby, Texas, USA

Consulting Expert in Cellular Network Technologies **2019**

Case Subject Matter - Consulting expert in matters related to Single Radio Voice Call Continuity, Dual Radio Voice Call Continuity, and various heterogeneous wireless technologies and standards committees related to seamless connectivity.

Work Performed - Consulting expert.

Qualcomm* v. Apple Inc.

Case No. 37-2017-00041389-CU-BC-NC

Quinn Emanuel Urquhart & Sullivan, CA, USA

Expert Witness in Mobile Devices and Computer Architecture **2018 - 2019**

Case Subject Matter - Expert witness in mobile devices, computer architecture, and software system design for wireless communications.

Work Performed - Expert consulting.

Qualcomm* v. Apple Inc.

Inv No. 337-TA-1093

Quinn Emanuel Urquhart & Sullivan, CA, USA

Expert Witness in Mobile Devices and Computer Architecture **2017 - 2018**

Case Subject Matter - Expert witness in mobile devices, computer architecture, and software system design for wireless communications.

Work Performed - Expert consulting, expert reports, depositions, trial testimony.

Qualcomm* v. Apple Inc.

Quinn Emanuel Urquhart & Sullivan, CA, USA

Case No. 3:17-CV-1375-DMS-MDD

Expert Witness in Mobile Devices and Computer Architecture **2018 - 2019**

Case Subject Matter - Expert witness in wireless mobile devices, computer architecture, and software system design.

Work Performed - Expert consulting, expert reports, depositions, trial testimony.

Redzone Wireless LLC v. Netgear Inc.*

Bird Marella, CA, USA

Expert Witness in Wireless Hardware/Software Systems **2018 - 2019**

Case Subject Matter - Manufacturing of software and hardware used in wireless routers and base stations, including chipsets and software solutions.

Work Performed - Expert consulting, expert reports, depositions.

Nvidia* v. ZiiLabs Corporation

Quinn Emanuel Urquhart & Sullivan, NY, USA

Expert Witness in GPU Architecture, Computer Architecture **2018**

Case Subject Matter - Expert witness in the areas of Graphics Processor (GPU) architectures, memory systems architectures, and microprocessor design.

Work Performed - Expert consulting.

Acqis* v. EMC Corporation

Cooley LLP, CA, USA

Expert Witness in Computer Architecture **2017 - 2018**

Case Subject Matter - Expert witness in the areas of PCI, PCI-Express, system-on-chip technology, and computer memory technologies.

Work Performed - Expert consulting.

Qualcomm* v. Apple Inc.

Certain Mobile Electronic Devices and Radio Frequency and Processing Components Thereof, Inv No. 337-TA-1065

Quinn Emanuel Urquhart & Sullivan, CA, USA

Expert Witness in Mobile Devices and Computer Architecture **2017 - 2018**

Case Subject Matter - Expert witness in mobile devices, computer architecture, and software system design.

Work Performed - Expert consulting, expert reports, depositions.

Network Management Solutions* v. AT&T Mobility et. al
IP Law Leaders, Washington DC, USA

Expert Witness in Cellular Network Management

2017

Case Subject Matter - Expert witness in mobile devices, wireless technology, 3GPP standards, and alarm management.

Work Performed - Expert consulting.

Certain Memory Modules and Components Thereof, and Products Containing Same, Investigation No. 337-TA-1023

Netlist* v. S.K. Hynix

Mintz Levin Cohn Ferris Glovsky and Popeo PC, Boston, MA, USA

Expert Witness in Computer Architecture and Memory Systems

2016 - 2017

Case Subject Matter - Expert witness in the area of JEDEC standards essential DRAM memory module technology, relating to DIMM, R-DIMM and LR-DIMM as it applies to server based computing.

Work Performed - Expert consulting, source code review, declarations, expert reports, depositions, ITC trial testimony.

Certain Audio Processing Hardware, Software, and Products Containing Same, Inv. No. 337-TA-1026

Andrea Electronics Corporation*

Pepper Hamilton, LLP, Washington, DC, USA

Expert Witness in Audio Processing Hardware and Software

2017

Case Subject Matter - Expert witness in hardware/software based digital signal processing systems audio processing and noise cancellation technology.

Work Performed - Expert consulting.

Specialized Monitoring Solutions, LLC v. Lutron Electronics Co., Inc.*

Vinson & Elkins LLP, Texas USA

Expert Witness in Embedded and Distributed Software Systems

2017

Case Subject Matter - Expert witness in embedded software and hardware systems, as well as distributed data storage and sensing.

Work Performed - Expert consulting.

Huawei Technologies Co., Ltd.*, v. Samsung Electronics America, Inc. et al

Sidley Austin LLP, California USA

Expert Witness in 4G and Legacy Cellular Technologies

2016 - 2017

Case Subject Matter - Expert witness in 4G and legacy cellular technologies.

Work Performed - Expert consulting, affidavits, claim construction.

Godo Kaisha IP Bridge 1* v. Broadcom Limited et. al

Ropes & Gray LLP, New York USA

Expert Witness in Computer Architecture

2016 - 2017

Case Subject Matter - Consultant in the area of ARM based embedded computing architecture and system on-chip technology. Reverse engineering of VHDL, Verilog and RTL based technologies, as it pertains to multicore system architectures.

Work Performed - Expert consulting, source code review, claim construction.

Huawei Technologies Co. Ltd.* v. T-Mobile US, Inc. and T-Mobile USA, Inc.

Fish & Richardson P.C., Texas USA

Expert Witness in 4G and Legacy Cellular Technologies

2016 - 2017

Case Subject Matter - Expert witness in 4G and legacy cellular technologies.

Work Performed - Expert consulting, claim construction, affidavits.

ACI Worldwide Corp. v. Mastercard International Incorporated*

Armstrong Teasdale LLP, Missouri, USA

Expert witness regarding financial transaction systems

2016 - 2017

Case Subject Matter - Expert witness in trade secret misappropriation as it pertains to middleware message passing systems and financial transaction networks.

Work Performed - Expert consulting, source code review, declarations, expert reports, depositions.

Sony Computer Entertainment America v. Rothschild Digital Media Innovations*

Carey Rodriguez Milian Gonya, LLP, Florida, USA

Expert witness regarding distributed multimedia systems

2016

Case Subject Matter - Expert witness in the area of distributed computing systems and multimedia technologies.

Work Performed - Expert consulting, declarations, expert reports, depositions.

DTS, Inc., et al. v. Nero AG, et al.*

Glaser Weil Fink Jacobs Howard Avchen & Shapiro, Los Angeles CA, USA

Expert witness regarding distributed multimedia systems

2016

Case Subject Matter - Expert witness in the area of software solutions for audio and video codecs.

Work Performed - Expert consulting, source code review, experimental analysis, expert reports, depositions.

Advanced Silicon Technologies*

Mintz Levin Cohn Ferris Glovsky and Popeo PC, Boston, MA, USA

Expert Consultant in Microprocessor Architecture, Intellectual Property

2015 - 2016

Case Subject Matter - Consultant in the area of computer architecture and microprocessor technologies, specifically related to memory systems.

Work Performed - Expert consulting.

Certain Audio Processing Hardware and Software and Products Containing the Same, ITC Inv. No. 337-TA-949

Lenovo (United States), Inc.*

Toshiba Corp

Akin Gump Strauss Hauer & Feld LLP, Philadelphia, PA, USA

Expert Witness in Digital Signal Processing, Intellectual Property

2015 - 2016

Case Subject Matter - Expert witness in hardware/software based digital signal processing systems tailored for noise cancellation technology.

Work Performed - Expert consulting, source code review, claim construction, expert reports, deposition.

Intel Corporation v. Future Link Systems*

Irell & Manella LLP, Los Angeles, CA USA

Expert Witness in Computer Architecture

2015 - 2018

Case Subject Matter - Expert witness in the areas of PCI, PCI-Express, system-on-chip technology, and computer memory technologies.

Work Performed - Expert consulting, source code review, declarations, expert reports, deposition.

Advanced Touchscreen and Gesture Technologies, LLC* v. Samsung Electronics, America, Inc., et al.

Robins Kaplan LLP, Intellectual Property, Minnesota, USA

Expert Witness in Mobile Devices and User Interfaces

2015 - 2017

Case Subject Matter - Expert witness in the analysis and reverse engineering of software systems pertaining to mobile devices, and human computer interfaces.

Work Performed - Expert consulting, declarations, expert reports.

Intellectual Ventures* v. Ericsson et al.

Dechert LLP, Los Angeles, CA, USA

Expert Witness in 3GPP standards and LTE Technologies, Intellectual Property 2014 - 2016

Case Subject Matter - Expert witness in 3GPP standards as they pertain to LTE cellular communications networks, in addition to system hardware and software design.

Work Performed - Expert consulting, source code review, declarations, claim construction, tutorials.

Papst Licensing GMBH & Co. KG.*

DiNovo & Price Ellwanger Hardy, Austin, TX USA

Expert Witness in FPGA Technologies, Intellectual Property 2014 - 2016

Case Subject Matter - Consultant in FPGA computing platforms and design flow processes, prior art, and infringement analysis.

Work Performed - Expert consulting, claim construction.

Locata LBS* v. Paypal Inc., et al.

Glaser Weil Fink Jacobs Howard Avchen & Shapiro, Los Angeles, CA, USA

Expert Witness in Geofencing Systems, Intellectual Property 2014 - 2015

Case Subject Matter - Expert witness in geofencing technology, geolocational technology, and systems architecture as it pertains to mobile cellular telecommunications and enterprise software systems.

Work Performed - Expert consulting, claim construction, expert reports, deposition testimony.

Cell and Network Selection LLC v. ZTE*

Pillsbury, Winthrop Shaw & Pittman, San Diego, CA, USA

Expert Witness in 3G/4G Cellular Technology, Intellectual Property 2014 - 2015

Case Subject Matter - Expert witness in technology pertaining to 3G, 3.5G, 3.75G and 4G wireless handset technology.

Work Performed - Expert consulting, claim construction, expert reports, deposition testimony.

CA Inc. D/B/A CA Technologies* v. AppDynamics, Inc.

Bracewell & Giuliani, Houston, TX, USA

Holland & Knight, Boston MA USA

Expert Witness in Enterprise Software Monitoring, Intellectual Property 2014 - 2015

Case Subject Matter - Expert witness in technology pertaining to dynamic runtime profiling of distributed software applications, specifically around Java and .NET technologies.

Work Performed - Expert consulting, source code review, declarations, expert reports, deposition testimony.

M Seven System Limited v. Leap Wireless International, Inc.* et al.

Glaser Weil Fink Jacobs Howard Avchen & Shapiro, Los Angeles, CA, USA

Expert Witness in 3G/4G Feature Phone Software Systems, Intellectual Property 2014

Case Subject Matter - Expert witness in the area of mobile telecommunications technology, particularly cellular handset hardware and software design.

Work Performed - Expert consulting, source code review.

Lunareye v. Passtime*.

Conley Rose, P.C., Austin, TX, USA

Expert Witness in GPS Tracking Solutions 2014

Case Subject Matter - Expert witness in the area of mobile GPS tracking solutions software and hardware systems.

Work Performed - Expert consulting.

**Certain Wireless Devices With 3G and/or 4G Capabilities and Components Thereof, ITC Inv. No. 337-TA-868
Interdigital, Inc.***

Wilson, Sonsini, Goodrich & Rosati LLP, Austin, TX, USA

Expert Witness in 3G/4G Cellular Technology, Intellectual Property 2013 - 2015

Case Subject Matter - Expert witness in software systems and hardware systems, as they pertain to 3G/4G cellular communications and standards.

Work Performed - Expert consulting, source code review, claim construction, declarations, expert report, depositions, ITC trial testimony.

Investment Technology Group* v. United States Internal Revenue Services

Expert Witness in Financial Services Technology 2013

Case Subject Matter - Expert witness in the area of high performance software systems targeting financial market services.

Work Performed - Expert consulting, source code review, declarations, depositions, testimony at hearing.

Carrier Corporation v. Goodman Manufacturing*, et al.

Baker Botts LLP, Houston, TX USA

Expert Witness in Software and Hardware Systems, Intellectual Property 2013 - 2014

Case Subject Matter - Expert witness in the area of microprocessor based, serial distributed communications systems.

Work Performed - Expert consulting, source code review.

Gametek LLC* v. Facebook Inc. et al.

Collins, Edmonds, Porgorzelski, Schlather & Tower PLLC, Houston, TX USA

Expert Witness in Mobile Gaming Technologies, Intellectual Property 2013

Case Subject Matter - Expert witness in internet based client-server software systems for mobile and web browser based gaming technology.

Work Performed - Expert consulting, source code review.

Ultimate Pointer LLC* v. Nintendo Co. LTD et al.

Conley Rose P.C., Houston, TX USA

Expert Witness in Console Based Video Game Technology, Intellectual Property 2013 - 2015

Case Subject Matter - Expert witness in hardware and software systems for console based video game technology.

Work Performed - Expert consulting, source code review, declarations, expert reports, deposition testimony.

Alliantgroup, L.P. v. Tax Point Advisors*

Jeffrey Feingold and Tax Point Advisors, Houston, TX USA

Expert Witness in Internet Technology 2013

Case Subject Matter - Expert witness in IP based internet technology, packet spoofing and information systems.

Work Performed - Expert consulting, declarations.

Kerry T. Thibodeaux, M.D. v. American Lifecare Inc.*

Cox, Cox Filo, Camel & Wilson, Lake Charles, LA USA

Expert Witness in Medical Software Systems 2013

Case Subject Matter - Expert witness in medical billing and expense recording enterprise software systems.

Work Performed - Expert consulting.

Opelousas General Hospital Authority et al v. Fairpay Solutions Inc*

Cox, Cox Filo, Camel & Wilson, Lake Charles, LA USA

Expert Witness in Medical Software Systems

2013

Case Subject Matter - Expert witness in medical billing and expense recording enterprise software systems.

Work Performed - Expert consulting.

Wi-LAN USA, Inc. and Wi-LAN, Inc.* v. Alcatel-Lucent USA Inc.

Vinson Elkins LLP, Dallas, TX USA

Expert Witness in 3GPP LTE Technology, Intellectual Property

2012 - 2013

Case Subject Matter - Reverse engineering, analysis and education of counsel in the 3GPP LTE specification, and related software and hardware systems.

Work Performed - Expert consulting, source code review, claim construction, expert declarations.

Wi-LAN USA, Inc. and Wi-LAN, Inc.* v. Ericsson Inc., and Telefonaktiebolaget LM Ericsson

Vinson Elkins LLP, Dallas, TX USA

Expert Witness in 3GPP LTE Technology, Intellectual Property

2012 - 2013

Case Subject Matter - Reverse engineering, analysis and education of counsel in the 3GPP LTE specification, and related software and hardware systems.

Work Performed - Expert consulting, source code review, claim construction, expert declarations.

E-Contact Technologies, LLC v. Dell Inc.*, et al.

Baker Botts LLP, Houston, TX USA

Expert Witness in Mobile Operating Systems, Intellectual Property

2012

Case Subject Matter - Reverse engineering and analysis of the Android operating system as it pertained to mobile and tablet computing devices. Source code reverse engineering, system architecture and related analysis.

Work Performed - Expert consulting, source code review.

CheckFree Corporation* and CashEdge, Inc.* v. Metavante Corporation and Fidelity National Information Services, Inc.

Paul, Weiss, Rifkind, Wharton & Garrison LLP, New York, NY USA

Expert Witness in Banking and Billing Software Systems, Intellectual Property

2012

Case Subject Matter - Software systems analysis and reverse engineering of large scale software based financial billing systems. Source code reverse engineering, claim chart generation, expert report generation and testimony.

Work Performed - Expert consulting, source code review.

Realtime Data, LLC v. NASDAQ*, Chase Bank*, Goldman Sachs* et al.

Proskauer Rose LLP, New York, NY USA

Expert Witness High Performance Software Systems, Intellectual Property

2012

Case Subject Matter - Expert witness for joint defense counsel in the matter of large scale high frequency financial data aggregation platforms.

Work Performed - Expert consulting, claim construction, technical tutorials, declaration, expert reports, deposition testimony.

Realtime Data, LLC v. Thomson Reuters* et al.

Vinson & Elkins LLP, Austin, TX USA

Consultant in High Performance Software Systems, Intellectual Property

2011 - 2012

Case Subject Matter - Expert witness for joint defense counsel in the matter of large scale high frequency financial data aggregation platforms.

Work Performed - Expert consulting, claim construction, technical tutorials, declaration, expert reports, deposition testimony.

General Electric Co.* v. Mitsubishi Heavy Industries Ltd.

Weil, Gotshal & Manges LLP, Dallas, TX USA

Expert Witness in Hardware/Software Analysis, Intellectual Property 2010 - 2011

Case Subject Matter - Reverse engineering of real-time embedded system software source code and hardware system architecture pertaining to variable speed wind turbines and FPGA based sub-systems.

Work Performed - Expert consulting, declarations, source code review.

Atlantic Specialty Insurance et al v. AE Outfitters Retail Company*, et al

Smith Mazure Director Wilkins Young & Yagerman, P.C., NY USA

Expert Witness in Embedded Hardware/Software Systems 2011

Case Subject Matter - Hardware and software system analysis of real-time networked embedded computing systems as it pertains to fire alarm infrastructure and fault handling.

Work Performed - Expert consulting, technical tutorial, expert declarations.

Gamestop*, Inc v. Bexar Appraisal

Brusniak and Blackwell PC, Dallas, TX USA

Expert Witness in Software Analysis, Intellectual Property Litigation 2011

Case Subject Matter - Expert witness on the tangibility of software as it pertains to embedded computing, networking, and gaming platforms.

Work Performed - Expert consulting, expert declarations.

Quality Analytic Systems, Inc. v. Zebec Data Systems*

Rymer, Moore, Jackson & Echols, P.C., Houston, TX USA

Expert Witness in Software Systems 2011

Case Subject Matter - Reverse engineering and software analysis of enterprise level internet based medical billing software systems.

Work Performed - Expert consulting, source code review, declarations, arbitration.

Passlogix, Inc. v. 2FA Inc.*

Expert Witness in Smart Card Middleware Solutions, Trade Secret Exposure 2010

Case Subject Matter - Trade secret analysis of software and systems architecture as it pertains to optimal selection of smart card middleware solutions on a given computer system.

Work Performed - Expert consulting, expert declarations.

Terra Nova Sciences*. v. JOA Oil and Gas, B. V. et al.

Abraham & Watkins et al. LLP, Houston, TX USA

Expert Witness in Software Systems, Intellectual Property Litigation 2010

Case Subject Matter - Expert software analyst of algorithms and geomechanics modeling systems as they pertain to oil well reservoirs.

Work Performed - Expert consulting, source code review.

Paltalk Holdings, Inc.* v. Sony Computer Entertainment America Inc. et al.

Heim Payne & Chorush LLP, Houston, TX USA

Software Analysis Expert, Intellectual Property Litigation 2010

Case Subject Matter - Reverse engineering of internet based client-server video game console and server software architecture.

Work Performed - Expert consulting, source code review, infringement analysis.

Technomedia International, Inc.* v. International Training Services, Inc., et al.

Bracewell & Giuliani, LLP, Houston, TX USA

Expert Witness in Software Analysis, Contract Dispute 2010

Case Subject Matter - Web enabled teaching materials as it pertains to oil well drilling. Analysis of internet based audio and video content delivery mechanisms and related website architecture.

Work Performed - Expert consulting, expert reports.

Gamestop, Inc.* v. Bexar Appraisal

Brusniak and Blackwell PC, Dallas, TX USA

Expert Witness in Software Analysis, Tax Dispute

2009 - 2010

Case Subject Matter - On the tangibility of software as it pertains to embedded computing, net-working, and gaming platforms.

Work Performed - Expert consulting, expert reports.

Whetstone Electronics, LLC* v. Epson America, et al.

DiNovo & Price Ellwanger Hardy, Austin, TX USA

Expert Witness in System Analysis, Intellectual Property Litigation

2009 - 2011

Case Subject Matter - Embedded computing systems pertaining to printer technology and computer hardware acceleration (microprocessors, DSP, FPGA and CPLD).

Work Performed - Expert consulting.

Whetstone Electronics, LLC* v. Xerox Corporation, et al

DiNovo & Price Ellwanger Hardy, Austin, TX USA

Expert Witness in System Analysis, Intellectual Property Litigation

2009 - 2011

Case Subject Matter - Embedded computing systems pertaining to printer technology and computer hardware acceleration (microprocessors, DSP, FPGA and CPLD).

Work Performed - Expert consulting.

General Electric, Inc.* v. Mitsubishi Heavy Industries, Inc.

Vinson & Elkins LLP, Austin, TX USA

Expert Witness in Hardware and Software Analysis, Intellectual Property **2008 - 2009**

Case Subject Matter - Real time embedded computing and hardware/software designs for variable speed wind turbines, including digital signal processing DSP and FPGA based subsystems.

Work Performed - Expert consulting, source code review, technical tutorials, declarations, expert reports, depositions, ITC trial preparation.

Paltalk Holdings, Inc.* v. Microsoft Corporation

Heim Payne & Chorush LLP, Houston, TX USA

Technical Expert, Intellectual Property Litigation

2007 - 2008

Case Subject Matter - Internet based client server console gaming architecture for real time experience.

Work Performed - Expert consulting, source code review, technical tutorials.

SuperSpeed Software, LLC* v. IBM Corporation

Heim Payne & Chorush LLP, Houston, TX USA

Technical Expert in Software Analysis, Intellectual Property Litigation **2007 - 2008**

Case Subject Matter - Computer database technology, parallel file systems and clustered computing.

Work Performed - Expert consulting, technical tutorial, source code review.

QPSX Developments 5 Pty Ltd.* v. Juniper Networks, Inc.

Fulbright and Jaworski LLP, Houston, TX USA

Technical Consultant, Intellectual Property Litigation

2006 - 2007

Case Subject Matter - Data transmission algorithms for computer networks.

Work Performed - Consulting, claim construction, claim chart preparation, technical tutorials.

Commonwealth Scientific and Indus. Research Org.* v. Buffalo Tech. Inc.

Fulbright and Jaworski LLP, Houston, TX USA

Technical Consultant, Intellectual Property Litigation

2006 - 2007

Case Subject Matter - High speed data rate network for wireless local area networks.

Work Performed - Consulting, claim construction, claim chart preparation, technical tutorials.

Microsoft Corporation v. Commonwealth Scientific and Indus. Research Org.*

Fulbright and Jaworski LLP, Houston, TX USA

Technical Consultant, Intellectual Property Litigation

2006 - 2007

Case Subject Matter - High speed data rate communications for wireless local area networks.

Work Performed - Consulting, claim construction, claim chart preparation, technical tutorials.

Tantivy Communications, Inc.* v. Lucent Technologies, Inc.

Fulbright and Jaworski LLP, Houston, TX USA

Technical Consultant, Intellectual Property Litigation

2004 - 2005

Case Subject Matter - CDMA2000 based cellular networks, including data retransmission algorithms at multiple layers.

Work Performed - Consulting, claim construction, claim chart preparation, technical tutorials.

**Volunteer
Organizations**

Rice Alliance for Technology and Entrepreneurship Austin, Texas, USA

Executive Committee

2009 - Present

The Rice Alliance for Technology and Entrepreneurship strives to improve the entrepreneurial ecosystem of Central Texas by: helping entrepreneurs successfully found, fund, grow and exit new companies, helping investors successfully identify and engage with promising new ventures, and showcasing emerging technologies and business models to further educate and engage the community.

Capital Factory, TX USA

Mentor

2014 - Present

Mentor, advisor and investor in one of the most successful start-up accelerators in the United States.

OwlSpark - Rice University, Houston, Texas, USA

Mentor

2014

Mentor and advisor to university based early stage technology companies within Rice University's accelerator program.

Incubation Station, TX USA

Mentor

2013

Incubation Station is an accelerator that brings together a consortium of Austins notable entrepreneurs, investors and advisors for the purpose of mentoring high-potential, market-validated consumer product companies to more effectively manufacture, distribute, market and grow their products and services.

**Honors and
Awards**

Texas Instruments Fellowship Recipient

Nokia Grant Recipient

National Science Foundation Grant Recipient

Rice University Fellowship Recipient

Rensselaer Alumni Scholarship Recipient

Linear Tech / Mueller Scholarship Recipient

Rensselaer Polytechnic Institute: Graduated Cum Laude, Deans List All Semesters

Eta Kappa Nu - National Electrical and Computer Engineering Honors Society

IEEE Member - Institute of Electrical and Electronics Engineers

ACM Member - Association For Computing Machinery

Exhibit 2

MATERIALS CONSIDERED
Dr. Michael C. Brogioli

PRODUCTION DOCUMENTS		
ARM_00000634; (132241)	QCARM_7517677	QCVARM_1069941
ARM_00001067	QCARM_7622616	QCVARM_1069945
ARM_00001192	QCVARM_0000061	QCVARM_1069949
ARM_00001195	QCVARM_0000085	QCVARM_1070034
ARM_00001198	QCVARM_0000092	QCVARM_1070271
ARM_00001495	QCVARM_0000114	QCVARM_1070919
ARM_00001512	QCVARM_0000123	QCVARM_1070944
ARM_00001777	QCVARM_0000135	QCVARM_1070982
ARM_00002045	QCVARM_0000142	QCVARM_1070993
ARM_00003305	QCVARM_0000180	QCVARM_1071021
ARM_00005340	QCVARM_0000218	QCVARM_1071165
ARM_00025401	QCVARM_0000269	QCVARM_1071192
ARM_00025402	QCVARM_0000395	QCVARM_1071193
ARM_00025403	QCVARM_0003565	QCVARM_1071194
ARM_00036346	QCVARM_0008126	QCVARM_1072199
ARM_00055357	QCVARM_0447175	QCVARM_1078822
ARM_00056571	QCVARM_0447248	QCVARM_1090346
ARM_00062441	QCVARM_0447252	QCVARM_1117866
ARM_00062474	QCVARM_0448361	QCVARM_1117873
ARM_00063298	QCVARM_0448757	QCVARM_1117891
ARM_00067349	QCVARM_0448842	QCVARM_1117901
ARM_00068087	QCVARM_0449653	QCVARM_1117934

ARM_00068131	QCVARM_0449658	QCVARM_1117938
ARM_00068459	QCVARM_0449970	QCVARM_1117942
ARM_00068504	QCVARM_0451824	QCVARM_1117977
ARM_00075096	QCVARM_0452199	QCVARM_1117981
ARM_00075098	QCVARM_0452296	QCVARM_1118003
ARM_00075343	QCVARM_0452598	QCVARM_1118012
ARM_00076113	QCVARM_0453724	QCVARM_1118024
ARM_00079520	QCVARM_0454071	QCVARM_1118029
ARM_00079530	QCVARM_0454629	QCVARM_1118043
ARM_00079722	QCVARM_0457029	QCVARM_1118059
ARM_00082009	QCVARM_0463558	QCVARM_1118067
ARM_00085567	QCVARM_0467659	QCVARM_1118081
ARM_00086164	QCVARM_0467852	QCVARM_1118085
ARM_00087844	QCVARM_0468148	QCVARM_1118089
ARM_00089058	QCVARM_0468174	QCVARM_1118481
ARM_00090791	QCVARM_0468422	QCVARM_1118510
ARM_00091389	QCVARM_0468612	QCVARM_1118515
ARM_00091657	QCVARM_0523656	QCVARM_1118518
ARM_00091659	QCVARM_0523826	QCVARM_1118524
ARM_00091714	QCVARM_0523837	QCVARM_1118528
ARM_00091768	QCVARM_0524007	QCVARM_1118531
ARM_00091799	QCVARM_0524624	QCVARM_1118534
ARM_00091834	QCVARM_0525344	QCVARM_1118538
ARM_00091869	QCVARM_0526828	QCVARM_1118543

ARM_00091903	QCVARM_0527125	QCVARM_1118546
ARM_00094099	QCVARM_0527544	QCVARM_1118549
ARM_00094197	QCVARM_0527546	QCVARM_1118552
ARM_00094200	QCVARM_0528119	QCVARM_1118555
ARM_00094204	QCVARM_0528955	QCVARM_1118559
ARM_00100013	QCVARM_0528956	QCVARM_1118565
ARM_00102683	QCVARM_0529072	QCVARM_1119008
ARM_00103566	QCVARM_0529887	QCVARM_1119108
ARM_00103635	QCVARM_0531350	QCVARM_1120024
ARM_00103918	QCVARM_0531892	QCVARM_1120153
ARM_00110020	QCVARM_0532239	QCVARM_1120206
ARM_00110507	QCVARM_0534596	QCVARM_1120224
ARM_00110511	QCVARM_0534597	QCVARM_1120267
ARM_00110513	QCVARM_0535116	QCVARM_1120481
ARM_00114880	QCVARM_0537065	QCVARM_1120482
ARM_00118835	QCVARM_0540468	QCVARM_1120486
ARM_00132256	QCVARM_0573056	QCVARM_1120490
ARM_01020098	QCVARM_0573677	QCVARM_1120495
ARM_01020186	QCVARM_0575611	QCVARM_1120497
ARM_01020195	QCVARM_0575613	QCVARM_1120535
ARM_01215486	QCVARM_0575616	QCVARM_1120540
ARM_01215564	QCVARM_0575617	QCVARM_1120546
ARM_01215878	QCVARM_0577503	QCVARM_1120548
ARM_01215885	QCVARM_0595815	QCVARM_1120549

ARM_01215886	QCVARM_0599801	QCVARM_1120550
ARM_01215887	QCVARM_0600038	QCVARM_1120551
ARM_01215888	QCVARM_0600039	QCVARM_1120552
ARM_01215889	QCVARM_0600040	QCVARM_1120553
ARM_01215997	QCVARM_0600041	QCVARM_1120554
ARM_01216002	QCVARM_0600042	QCVARM_1120555
ARM_01216178	QCVARM_0600043	QCVARM_1120556
ARM_01230076	QCVARM_0600044	QCVARM_1120557
ARM_01230110	QCVARM_0600045	QCVARM_1120558
ARM_01230123	QCVARM_0600046	QCVARM_1120559
ARM_01230402	QCVARM_0600047	QCVARM_1120560
ARM_01231025	QCVARM_0600048	QCVARM_1120561
ARM_01231038	QCVARM_0600049	QCVARM_1120562
ARM_01231394	QCVARM_0600050	QCVARM_1120563
ARM_01235323	QCVARM_0600051	QCVARM_1120564
ARM_01238384	QCVARM_0600052	QCVARM_1120565
ARM_01241285	QCVARM_0600053	QCVARM_1120566
ARM_01241565	QCVARM_0600054	QCVARM_1120567
ARM_01241577	QCVARM_0600055	QCVARM_1120568
ARM_01241585	QCVARM_0600056	QCVARM_1120569
ARM_01249519	QCVARM_0600057	QCVARM_1120570
ARM_01282655	QCVARM_0600058	QCVARM_1120571
ARM_01293447	QCVARM_0600059	QCVARM_1120572
ARM_01308019	QCVARM_0600060	QCVARM_1120573

ARM_01314327	QCVARM_0600061	QCVARM_1120574
ARM_01314329	QCVARM_0600062	QCVARM_1120575
ARM_01423632	QCVARM_0600063	QCVARM_1120576
ARM_01424394	QCVARM_0600064	QCVARM_1120577
ARM_01427450	QCVARM_0600065	QCVARM_1120578
ARMQC_00000640	QCVARM_0600066	QCVARM_1120579
ARMQC_00001038	QCVARM_0600067	QCVARM_1120580
ARMQC_00001136	QCVARM_0600068	QCVARM_1120581
ARMQC_00001163	QCVARM_0600069	QCVARM_1120582
ARMQC_00027166	QCVARM_0600070	QCVARM_1120583
ARMQC_00103710	QCVARM_0600071	QCVARM_1120584
ARMQC_00103718	QCVARM_0600072	QCVARM_1120585
ARMQC_02600838	QCVARM_0600073	QCVARM_1120586
ARMQC_02601067	QCVARM_0600074	QCVARM_1120587
ARMQC_02602445	QCVARM_0600075	QCVARM_1120588
ARMQC_02602450	QCVARM_0600076	QCVARM_1120589
ARMQC_02602454	QCVARM_0600077	QCVARM_1120590
ARMQC_02602458	QCVARM_0600078	QCVARM_1120591
ARMQC_02602462	QCVARM_0600079	QCVARM_1120592
ARMQC_02602466	QCVARM_0600080	QCVARM_1120593
ARMQC_02602472	QCVARM_0600081	QCVARM_1120594
ARMQC_02602528	QCVARM_0600082	QCVARM_1120595
ARMQC_02602531	QCVARM_0600083	QCVARM_1120596
ARMQC_02602547	QCVARM_0600084	QCVARM_1120597

ARMQC_02602550	QCVARM_0600085	QCVARM_1120598
ARMQC_02602646	QCVARM_0600086	QCVARM_1120599
ARMQC_02603587	QCVARM_0600087	QCVARM_1120600
ARMQC_026046020	QCVARM_0600088	QCVARM_1120601
ARMQC_02604609	QCVARM_0600089	QCVARM_1120602
ARMQC_02604610	QCVARM_0600090	QCVARM_1120603
ARMQC_02604611	QCVARM_0600091	QCVARM_1120604
ARMQC_02604612	QCVARM_0600092	QCVARM_1120605
ARMQC_02604613	QCVARM_0600093	QCVARM_1120606
ARMQC_02604614	QCVARM_0600094	QCVARM_1120607
ARMQC_02604615	QCVARM_0600095	QCVARM_1120608
ARMQC_02604616	QCVARM_0600096	QCVARM_1120609
ARMQC_02604617	QCVARM_0600097	QCVARM_1120610
ARMQC_02604618	QCVARM_0600098	QCVARM_1120611
ARMQC_02604619	QCVARM_0600101	QCVARM_1120612
ARMQC_02604620	QCVARM_0602198	QCVARM_1120613
ARMQC_02604621	QCVARM_0602227	QCVARM_1120614
ARMQC_02604622	QCVARM_0602258	QCVARM_1120615
ARMQC_02604623	QCVARM_0602295	QCVARM_1120616
ARMQC_02627275	QCVARM_0602359	QCVARM_1120617
ARMQC_02720214	QCVARM_0602404	QCVARM_1120618
ARMQC_02720220	QCVARM_0602564	QCVARM_1120619
ARMQC_02720226	QCVARM_0602952	QCVARM_1120620
ARMQC_02720230	QCVARM_0605502	QCVARM_1120621

ARMQC_02720249	QCVARM_0607060	QCVARM_1120622
ARMQC_02720251	QCVARM_0608131	QCVARM_1120623
ARMQC_02720258	QCVARM_0608391	QCVARM_1120624
ARMQC_02720259	QCVARM_0608423	QCVARM_1120625
ARMQC_02720265	QCVARM_0613037	QCVARM_1120626
ARMQC_02720272	QCVARM_0613083	QCVARM_1120627
ARMQC_02720278	QCVARM_0613160	QCVARM_1120628
ARMQC_02720279	QCVARM_0616871	QCVARM_1120629
ARMQC_02720284	QCVARM_0616912	QCVARM_1120630
ARMQC_02720291	QCVARM_0616916	QCVARM_1120631
ARMQC_02720292	QCVARM_0616935	QCVARM_1120632
ARMQC_02720300	QCVARM_0616952	QCVARM_1120633
ARMQC_02720303	QCVARM_0616967	QCVARM_1120634
ARMQC_02720310	QCVARM_0616970	QCVARM_1120635
ARMQC_02720315	QCVARM_0617730	QCVARM_1120636
ARMQC_02720320	QCVARM_0617948	QCVARM_1120637
ARMQC_02720324	QCVARM_0617951	QCVARM_1120638
ARMQC_02720329	QCVARM_0617954	QCVARM_1120639
ARMQC_02720333	QCVARM_0617961	QCVARM_1120640
ARMQC_02720337	QCVARM_0617964	QCVARM_1120641
ARMQC_02720342	QCVARM_0618338	QCVARM_1120642
ARMQC_02720347	QCVARM_0618354	QCVARM_1120643
ARMQC_02720352	QCVARM_0618382	QCVARM_1120644
ARMQC_02720799	QCVARM_0618384	QCVARM_1120645

ARMQC_02727610	QCVARM_0618420	QCVARM_1120646
ARMQC_02729064	QCVARM_0618453	QCVARM_1120647
ARMQC_02731051	QCVARM_0618712	QCVARM_1120648
ARMQC_02732393	QCVARM_0618741	QCVARM_1120649
ARMQC_02732558	QCVARM_0618977	QCVARM_1120650
ARMQC_02739661	QCVARM_0621447	QCVARM_1120651
ARMQC_02741466	QCVARM_0621448	QCVARM_1120652
ARMQC_02742804	QCVARM_0621692	QCVARM_1120653
ARMQC_02742823	QCVARM_0626519	QCVARM_1120654
ARMQC_02742861	QCVARM_0626590	QCVARM_1120655
ARMQC_02745725	QCVARM_0626603	QCVARM_1120656
ARMQC_02746634	QCVARM_0685544	QCVARM_1120657
ARMQC_02746871	QCVARM_0685578	QCVARM_1120658
ARMQC_02747093	QCVARM_0687476	QCVARM_1120659
ARMQC_02747097	QCVARM_0687479	QCVARM_1120660
ARMQC_02747103	QCVARM_0688777	QCVARM_1120661
ARMQC_02747104	QCVARM_0688932	QCVARM_1120662
ARMQC_02747567	QCVARM_0689117	QCVARM_1120663
ARMQC_02747848	QCVARM_0691521	QCVARM_1120664
ARMQC_02755397	QCVARM_0691526	QCVARM_1120665
ARMQC_02755446	QCVARM_0691853	QCVARM_1120666
ARMQC_02755490	QCVARM_0692665	QCVARM_1120667
ARMQC_02755534	QCVARM_0699176	QCVARM_1120668
ARMQC_02755580	QCVARM_0699179	QCVARM_1120669

ARMQC_02755624	QCVARM_0699275	QCVARM_1120670
ARMQC_02755674	QCVARM_0699278	QCVARM_1120671
ARMQC_02755903	QCVARM_0707732	QCVARM_1120672
ARMQC_02755905	QCVARM_0707997	QCVARM_1120673
ARMQC_02756148	QCVARM_0708086	QCVARM_1120674
ARMQC_02756208	QCVARM_0708107	QCVARM_1120675
ARMQC_02756245	QCVARM_0708118	QCVARM_1120676
ARMQC_02756246	QCVARM_0710047	QCVARM_1120677
ARMQC_02756344	QCVARM_0713513	QCVARM_1120678
ARMQC_02756542	QCVARM_0713516	QCVARM_1120679
ARMQC_02756544	QCVARM_0713528	QCVARM_1120680
ARMQC_02756860	QCVARM_0713530	QCVARM_1120681
ARMQC_02760525	QCVARM_0713532	QCVARM_1120682
ARMQC_02762974	QCVARM_0713535	QCVARM_1120683
ARMQC_02762991	QCVARM_0713538	QCVARM_1120684
ARMQC_02762992	QCVARM_0713652	QCVARM_1120685
ARMQC_02763016	QCVARM_0713665	QCVARM_1120686
ARMQC_02770599	QCVARM_0713840	QCVARM_1120687
ARMQC_02771125	QCVARM_0715414	QCVARM_1120688
ARMQC_02771126	QCVARM_0716360	QCVARM_1120689
ARMQC_02771127	QCVARM_0716389	QCVARM_1120690
ARMQC_02771128	QCVARM_0717008	QCVARM_1120691
ARMQC_02771129	QCVARM_0717291	QCVARM_1120692
ARMQC_02771151	QCVARM_0717359	QCVARM_1120693

ARMQC_02771168	QCVARM_0717757	QCVARM_1120694
ARMQC_02772241	QCVARM_0717964	QCVARM_1120695
ARMQC_02772246	QCVARM_0846761	QCVARM_1120696
ARMQC_02773656	QCVARM_0846871	QCVARM_1120697
ARMQC_02774029	QCVARM_0847000	QCVARM_1120698
ARMQC_02774378	QCVARM_0847094	QCVARM_1120699
ARMQC_02774539	QCVARM_0847188	QCVARM_1120700
ARMQC_02774642	QCVARM_0847548	QCVARM_1120701
ARMQC_02774767	QCVARM_0848033	QCVARM_1120702
ARMQC_02774844	QCVARM_0851120	QCVARM_1120703
ARMQC_02778180	QCVARM_0851333	QCVARM_1120704
ARMQC_02779064	QCVARM_0851410	QCVARM_1120705
ARMQC_02779076	QCVARM_0851449	QCVARM_1120706
ARMQC_02779099	QCVARM_0851511	QCVARM_1120707
ARMQC_02779107	QCVARM_0851876	QCVARM_1120708
ARMQC_02779116	QCVARM_0852203	QCVARM_1120709
ARMQC_02779122	QCVARM_0854027	QCVARM_1120710
ARMQC_02779133	QCVARM_0855474	QCVARM_1120711
ARMQC_02779171	QCVARM_0857113	QCVARM_1120712
ARMQC_02779174	QCVARM_0857149	QCVARM_1120713
ARMQC_02779176	QCVARM_0857152	QCVARM_1120714
ARMQC_02779179	QCVARM_0863181	QCVARM_1120715
ARMQC_02779181	QCVARM_0863435	QCVARM_1120716
ARMQC_02783473	QCVARM_0863641	QCVARM_1120717

ARMQC_02783618	QCVARM_0863644	QCVARM_1120718
ARMQC_02783619	QCVARM_0864030	QCVARM_1120719
ARMQC_02784120	QCVARM_0864277	QCVARM_1120720
ARMQC_02784199	QCVARM_0864833	QCVARM_1120721
ARMQC_02784204	QCVARM_0864834	QCVARM_1120722
ARMQC_02784227	QCVARM_0864838	QCVARM_1120723
FGS_0000162	QCVARM_0864924	QCVARM_1120724
FGS_0000395	QCVARM_0864967	QCVARM_1120725
FGS_0000409	QCVARM_0864969	QCVARM_1120726
FGS_0000446	QCVARM_0865344	QCVARM_1120727
FGS_0000458	QCVARM_0865345	QCVARM_1120728
FGS_0000525	QCVARM_0865370	QCVARM_1120999
QCARM_0027985	QCVARM_0865490	QCVARM_1121337
QCARM_00343954	QCVARM_0866177	QCVARM_1121338
QCARM_0337838	QCVARM_0867422	QCVARM_1121341
QCARM_0338573	QCVARM_1012343	QCVARM_1121346
QCARM_0340017	QCVARM_1012399	QCVARM_1121350
QCARM_0343120	QCVARM_1014030	QCVARM_1121359
QCARM_0343533	QCVARM_1014307	QCVARM_1121930
QCARM_0343954	QCVARM_1014955	QCVARM_1121931
QCARM_0562765	QCVARM_1015821	QCVARM_1122733
QCARM_0566625	QCVARM_1018853	QCVARM_1122742
QCARM_2412907	QCVARM_1019083	QCVARM_1122745
QCARM_2430181	QCVARM_1022267	QCVARM_1126209

QCARM_3059661	QCVARM_1022268	QCVARM_1129673
QCARM_3066477	QCVARM_1024852	QCVARM_1129695
QCARM_3215122	QCVARM_1028388	QCVARM_1129711
QCARM_3216178	QCVARM_1028750	QCVARM_1130170
QCARM_3337526	QCVARM_1029757	QCVARM_1133205
QCARM_3337900	QCVARM_1029911	QCVARM_1133211
QCARM_3338108	QCVARM_1030509	QCVARM_1133757
QCARM_3339493	QCVARM_1030813	QCVARM_1137360
QCARM_3352796	QCVARM_1030816	QCVARM_1140735
QCARM_3353006	QCVARM_1031097	QCVARM_1140739
QCARM_3353040	QCVARM_1042773	QCVARM_1140742
QCARM_3353126	QCVARM_1042776	QCVARM_1141284
QCARM_3424233	QCVARM_1042777	QCVARM_1146697
QCARM_3424399	QCVARM_1066278	QCVARM_1149389
QCARM_3424873	QCVARM_1066811	QCVARM_1149435
QCARM_3428243	QCVARM_1066820	QCVARM_1149528
QCARM_3430479	QCVARM_1067283	QCVARM_1151573
QCARM_3433633	QCVARM_1067284	QCVARM_1151597
QCARM_3460976	QCVARM_1068222	QCVARM_1151603
QCARM_3460981	QCVARM_1068388	QCVARM_1151620
QCARM_3522626	QCVARM_1068512	QCVARM_1151672
QCARM_3537383	QCVARM_1068516	QCVARM_1151710
QCARM_3537716	QCVARM_1068521	QCVARM_1151907
QCARM_7474253	QCVARM_1068525	QCVARM_1151964

QCARM_7477120	QCVARM_1068603	QCVARM_1151965
QCARM_7484471	QCVARM_1068612	QCVARM_1151966
QCARM_7484477	QCVARM_1068666	QCVARM_1151967
QCARM_7484481	QCVARM_1068922	QCVARM_1151968
QCARM_7509431		

Pleadings from C.A. No. 1:24-cv-00490-MN:

- [Dkt. 02] Plaintiff Qualcomm's Original Complaint (FILED UNDER SEAL)
- [Dkt. 36] QC First Amended Complaint & Exhibit A (FILED UNDER SEAL)
- [Dkt. 39] QC First Amended Complaint & Exhibit A (Public)
- [Dkt. 137] Plaintiff Qualcomm's Second Amended Complaint (FILED UNDER SEAL)
- [Dkt. 137-01] Exhibit A to Plaintiff Qualcomm's Second Amended Complaint (FILED UNDER SEAL)
- [Dkt. 378] Plaintiffs' Letter in Response to Defendant's August 11 Letter to Special Master Helena C. Rychlicki & Docket Entries and Cited Exhibits Therein

Pleadings from C.A. No. 1:22-cv-01146-MN:

- [Dkt. 001] Plaintiff Arm LTD's Complaint
- [Dkt. 018] Defendants' Answer and Defenses to Plaintiff's Complaint and Jury Demand and Defendants' Amended Counterclaim (FILED UNDER SEAL)
- [Dkt. 018ECF] Notice of Electronic Filing re [Dkt. 018]
- 2022.11.15 [Dkt. 21] Arm's Answer and Affirmative Defenses to Qualcomm Inc., Qualcomm Technologies, Inc., and Nuvia, Inc.'s Amended Counterclaim
- [Dkt. 303] Plaintiff's Letter to the Honorable Laura D. Hatcher Regarding Redactions to the March 6, 2024 Memorandum Order (with Exhibits)
- [Dkt. 312-01] Exhibit B to R. Calico Declaration (Hearing Transcript re Motion to Amend)
- [Dkt. 596] Opening Brief in Support of Plaintiff Arm LTD.'s Motion for Judgment as a Matter of Law or a New Trial (FILED UNDER SEAL)
- [Dkt. 596ECF] Notice of Electronic Filing re [Dkt. 596]
- [Dkt. 571 ECF] Jury Verdict
- [Dkt. 572] Verdict Form
- [Dkt. 595] Arm's Motion for Judgement as a Matter of Law or a New Trial
- [Dkt. 597] Nuvia, Inc.'s Renewed motions for Judgment as a Matter of Law
- [Dkt. 602] Qualcomm's Post-Trial Brief Regarding Equitable Defenses
- [Dkt. 614] Reply Brief in Support of Plaintiff Arm LTD.'s Motion for Judgment as a Matter of Law or a New Trial (FILED UNDER SEAL)
- DTX-0936 (Qualcomm Brings Receipts: Snapdragon X Elite Gets Benchmarked, Completely Dunks on Apple's M2 Processor)
- DTX-0937 (Windows Finally Has its Apple Mac Moment, and I'm More Excited About the Future of Laptops Than Ever Before)

- JTX-0001 (Nuvia ALA)
- JTX-0002 (Nuvia ALA v8 Annex – September 2019)
- JTX-0005 (Nuvia ALA v8 Annex – March 2020)
- JTX-0010 (QC ALA)
- JTX-0011 (QC ALA v8 Annex)
- JTX-0012 (QC ALA v8-Next Annex)
- JTX-0013 (QC ALA v9 Annex)

Depositions (and Exhibits thereto):

- 2023.10.25 Deposition Transcript of Jignesh Trivedi
- 2023.12.12 Deposition Transcript of Rene Haas
- 2023.12.14 Deposition Transcript of Vivek Agrawal (Corrected)
- 2023.11.15 Deposition Transcript of Richard Grisenthwaite
- 2025.06.17 Deposition Transcript of Phil Hughes
- 2025.06.18 Deposition Transcript of Karl Whealton
- 2025.06.20 Deposition Transcript of Martin Weidmann
- 2025.06.20 Deposition Transcript of Karthik Shivashankar
- 2025.06.25 Deposition Transcript of Gerard Williams
- 2025.06.25 Deposition Transcript of Kurt Wolf
- 2025.06.26 Deposition Transcript of William Abbey
- 2025.06.27 Deposition Transcript of Michael Williams
- 2025.06.27 Deposition Transcript of Richard Meacham
- 2025.07.01 Deposition Transcript of Jean Francois Vidon
- 2025.07.01 Deposition Transcript of Andrew Howard
- 2025.07.02 Deposition Transcript of Richard Grisenthwaite
- 2025.07.02 Deposition Transcript of Christopher Patrick
- 2025.07.02 Deposition Transcript of Paul Williamson
- 2025.07.03 Deposition Transcript of Jeffrey Golden
- 2025.07.03 Deposition Transcript of Cristiano Amon
- 2025.07.03 Deposition Transcript of Lynn Couillard
- 2025.07.04 Deposition Transcript of Peter Greenhalgh
- 2025.07.07 Deposition Transcript of Ziad Asghar
- 2025.07.07 Deposition Transcript of Aparajita Bhattacharya
- 2025.07.09 Deposition Transcript of Jignesh Trivedi
- 2025.07.09 Deposition Transcript of Jeffrey Fonseca
- 2025.07.10 Deposition Transcript of Durga Malladi
- 2025.07.10 Deposition Transcript of Akshay Bhatnagar
- 2025.07.11 Deposition Transcript of Larissa Cochran
- 2025.07.11 Deposition Transcript of James Jeon
- 2025.07.11 Deposition Transcript of Jonathan Weiser
- 2025.07.11 Deposition Transcript of Vivek Agrawal
- 2025.07.29 Deposition Transcript of Mohamed Awad
- 2025.07.30 Deposition Transcript of Anupa George

Expert Reports:

- Opening Expert Report of Patrick F. Kennedy, Ph.D., dated August 8, 2025
- Opening Expert Report of Eric A. Posner, dated August 8, 2025

Discovery Requests and Responses:

- 2025.03.10 QC Responses & Objections to Arm's 1st Set of ROGs (Nos. 1-9) (Highly Confidential – Attorneys' Eyes Only)
- 2025.05.09 QC Responses & Objections to Arm's 2nd Set of ROGs (Nos. 10-13) (Highly Confidential – Attorneys' Eyes Only)
- 2025.03.24 Arm Responses & Objections to QC's 1st Set of ROGs (Nos. 1-3) (Highly Confidential – Attorneys' Eyes Only)
- 2025.05.12 Arm's Responses and Objections to QC's Amended ROG No. 3 (Highly Confidential – Attorneys' Eyes Only)
- 2025.06.25 QC's 1st Supplemental Responses and Objections to Arm's 1st Set of ROGs (Nos. 1-5, 7, & 9) (Highly Confidential – Attorneys' Eyes Only) & Cited Documents
- 2025.07.11 Arm's 1st Supplemental Responses and Objections to QC's 1st Set of ROGs (Nos. 1-3) (Highly Confidential – Attorneys' Eyes Only) & Cited Documents
- 2025.07.11 Arm's 1st Supplemental Responses and Objections to QC's 1st Set of Amended ROG No. 3 (Highly Confidential – Attorneys' Eyes Only) & Cited Documents
- 2025.07.11 Arm's 1st Supplemental Responses and Objections to QC's 2nd Set of ROGs (Nos. 4-11) (Highly Confidential – Attorneys' Eyes Only) & Cited Documents
- 2025.07.11 Arm's 1st Supplemental Responses and Objections to QC's 3rd Set of ROGs (No. 12) (Highly Confidential – Attorneys' Eyes Only) & Cited Documents
- 2025.07.11 QC's 2nd Supplemental Responses and Objection to Arm's 1st Set of ROGs (Nos. 1-9) (Highly Confidential – Attorneys' Eyes Only) & Cited Documents
- 2025.07.11 QC's Responses and Objections to Arm's 2nd Set of ROGs (Nos. 10-13) (Highly Confidential – Attorneys' Eyes Only) & Cited Documents
- 2025.07.11 QC's Responses and Objections to Arm's 3rd Set of ROGs (Nos. 14-24) (Highly Confidential – Attorneys' Eyes Only) & Cited Documents
- 2025.07.11 QC's Responses and Objections to Arm's 1st Set of RFAs (Nos. 1-30) (Confidential)
- 2025.08.08 QC's 1st Supplemental Responses and Objections to Arm's 3rd Set of Interrogatories (Nos. 14-24) (Highly Confidential)
- 2025.08.08 QC's 2nd Supplemental Responses and Objections to Arm's 2nd Set of Interrogatories (Nos. 10-13) (Highly Confidential)
- 2025.08.08 QC's 3rd Supplemental Responses and Objections to Arm's 1st Set of ROGs (Nos. 1-9) (Highly Confidential)

Websites and Articles:

- Allain & Rey, "Vertical Integration as a Source of Hold-up," TSE-525, Sept. 2014
- "A Detailed History of Qualcomm" Available at <https://semiwiki.com/general/7353-a-detailed-history-of-qualcomm/>
- Arm Holdings plc Annual Report and Consolidated Financial Statements for the Year Ended March 31, 2024

- “Arm Architecture Reference Manual for A-profile architecture (Doc No. ARM DDI 0487; issued April 30, 2025),” available at <https://developer.arm.com/documentation/ddi0487/latest/>.
- Farrell, et al., *Coordination and Lock-In: Competition with Switching Costs and Network Effects*, 2007
- Hart, et al., *Vertical Integration and Market Foreclosure*
- “Innovation starts with Qualcomm products,” available at <https://www.qualcomm.com/prodcuts>
- “Arm Architecture for the Digital World,” available at <https://www.arm.com/architecture>
- “Arm Holdings CEO Predicts 50% Data Center CPU Market Share by 2025,” available at <https://www.webpronews.com/arm-holdings-ceo-predicts-50-data-center-cpu-market-share-by-2025/>
- “Half of the Compute Shipped to Top Hyperscalers in 2025 will be Arm-based,” <https://newsroom.arm.com/blog/half-of-compute-shipped-to-top-hyperscalers-in-2025-will-be-arm-based>
- ISA, commonality and differentiation, available at <https://developer.arm.com/documentation/102252/0100/Software-ecosystems>
- Intel Antitrust Rulings, available at <https://www.amd.com/en/legal/notices/antitrust-ruling.html>
- Instruction Set Architecture (ISA), available at <https://www.arm.com/glossary/isa>
- “The Official History of Arm,” available at <https://newsroom.arm.com/blog/arm-official-history>
- “The Arm Ecosystem: Powering AI Everywhere – From Cloud to Edge,” available at <https://newsroom.arm.com/blog/arm-computex-2025>
- “National Freight Selects Qualcomm’s OmniTRACS System to Enhance Service for Long-haul and Short-Haul Customers” Available at [https://www.qualcomm.com/news/releases/1996/08/national-freight-selects-qualcomms-omnitracs-system-enhance-service-long#:~:text=Headquartered%20in%20San%20Diego%2C%20Qualcomm,\(LEO\)%20satellite%20communications%20system](https://www.qualcomm.com/news/releases/1996/08/national-freight-selects-qualcomms-omnitracs-system-enhance-service-long#:~:text=Headquartered%20in%20San%20Diego%2C%20Qualcomm,(LEO)%20satellite%20communications%20system)
- Nenni, et al., *Mobile Unleashed, The Origin and Evolution of ARM Processors in Our Devices*, Dec. 2015
- Smartphones-Arm, available at <https://www.arm.com/markets/consumer-technologies/smartphones>
- Qualcomm: a history, available at <https://manufacturingdigital.com/technology/qualcomm-history>
- “Relief and challenges for chipmakers as Nvidia-Arm megadeal collapses,” available at <https://www.reuters.com/markets/us/relief-challenges-chipmakers-nvidia-arm-megadeal-collapses-2022-02-08/>
- “What Is SoC Development?,” available at <https://www.arm.com/glossary/soc-development>
- “About Arm. Company Value and History – Arm,” available at <https://www.arm.com/company>
- Intel, “What is a Microprocessor?”
- Subsidiaries of Registrant, Subsidiaries of Qualcomm Incorporated

- Newsroom, “The Arm Ecosystem: Powering AI Everywhere-From Cloud to Edge,” May 19, 2025
- “Message from Arm CEO – SoftBank Group Report, 2025,” available at https://group.softbank/en/ir/financials/annual_reports/2025/message/arm
- “Rene Haas: ‘Arm has the Most Ubiquitous Computer Architecture on the Planet’ – Chip Designer’s Chief Executive Talks About Diversification and how AI is Changing the Devices We Use,” available at <https://www.ft.com/content/5b191c4c-119f-4f97-bc61-622d20bfa46d>
- “Arm to Launch its Own Chip in Move that could Upend Semiconductor Industry – SoftBank-Owned Group Secures Meta as One of its First Customers for New Initiative,” available at <https://www.ft.com/content/95367b2b-2aa7-4a06-bdd3-0463c9bad008>
- The Armory Show: “Arm to Explore Designing its Own Chips, Chief Executive Says – SoftBank-Owned UK Group’s Strategic Shift Would Upend Chip Ecosystem,” July 30, 2025
- Fumagalli, et al., *Dynamic Vertical Foreclosure*, November 2020
- Vickers, *Concepts of Competition*, Oxford Economic Papers 47 (1995), 1-23
- “How Arm Could be the Unexpected Winner of the AI Investment Boom,” October 30, 2024
- Ordoover, et al., *Equilibrium Vertical Foreclosure*, The American Economic Review, March 1990, Vol. 80, No. 1 (1990), 127-142
- Rey, et al., *A Primer on Foreclosure*, Handbook of Industrial Organization, Vol. 3 (2007) Chapter 33
- RISC-V Members – About Members Page
- “Cellphone: Unseen Connections Exhibits.” Available at <https://www.qualcomm.com/research/cellphone-unseen-connections>
- “Qualcomm celebrates 40 years as an American innovator” available at <https://www.qualcomm.com/news/onq/2025/03/qualcomm-celebrates-40-years-as-an-american-innovator#:~:text=Leveraging%20a%20legacy%20of%20breakthroughs,of%20industrial%20and%20embedded%20IoT.>
- “The Relentless Evolution of the Arm Architecture” available at <https://newsroom.arm.com/blog/evolution-of-arm-architecture-evolution-40-years#:~:text=In%201987%2C%20Acorn%20Computers%20launched,was%20a%20huge%20commercial%20success.>
- “Happy 40th Birthday to the Arm Architecture” available at <https://www.allaboutcircuits.com/news/happy-40th-birthday-to-the-arm-architecture/#:~:text=The%20Rise%20of%20ARM%20in%20Mobile%20The,cemented%20its%20role%20in%20the%20mobile%20industry.>
- “The ARMv8-A architecture and its ongoing development” available at <https://community.arm.com/arm-community-blogs/b/architectures-and-processors-blog/posts/the-armv8-a-architecture-and-its-ongoing-development#:~:text=ARMv8%2DA%2C%20the%20ARMv8%20A,partners%20as%20products%20are%20introduced>
- “WikiChip: Semiconductor & Computer Engineering” available at <https://en.wikichip.org/wiki/arm/armv8>.

- “Arm’s Solution to the Future Needs of AI, Security and Specialized Computing is v9” available at <https://newsroom.arm.com/news/arms-solution-to-the-future-needs-of-ai-security-and-specialized-computing-is-v9>.
- “About the ETM-M4” available at <https://developer.arm.com/documentation/ddi0440/c/introduction/about-the-etm-m4>
- “Embedded Trace Macrocell Trace source” available at <https://developer.arm.com/documentation/102119/0200/Trace-components/Embedded-Trace-Macrocell-Trace-source>
- “Advanced debug with ETM trace” available at https://learn.arm.com/learning-paths/embedded-and-microcontrollers/uv_debug/5_etm_trace/
- “About the Cryptographic Extension” available at <https://developer.arm.com/documentation/101432/r1p2/Functional-description/About-the-Cryptographic-Extension>
- “Learn the architecture - Understanding Armv9-A trace guide Version 1.0 Release information” available at <https://developer.arm.com/documentation/102856/0100/Embedded-Trace-Extension>.
- “Introduction to the IOMMU” available at <https://www.openeuler.org/en/blog/wxggg/2020-11-21-iommu-smmu-intro.html>
- “Learn the Architecture - SMMU Software Guide Version 1.0 Release information” available at <https://developer.arm.com/documentation/109242/0100/What-an-SMMU-does>.
- “Introduction to the Memory Tagging Extension,” available at <https://developer.arm.com/documentation/108035/latest/Introduction-to-the-Memory-Tagging-Extension#:~:text=Arm%20introduced%20the%20Memory%20Tagging,and%20mitigating%20memory-related%20vulnerabilities>
- “Permission Indirection and Permission Overlay Extensions,” available at [https://developer.arm.com/documentation/102376/latest/Permission-indirection-and-permission-overlay-extensions#:~:text=Permission%20overlays%20allow%20permissions%20to,Lookaside%20Buffer%20\(TLB\)%20maintenance](https://developer.arm.com/documentation/102376/latest/Permission-indirection-and-permission-overlay-extensions#:~:text=Permission%20overlays%20allow%20permissions%20to,Lookaside%20Buffer%20(TLB)%20maintenance)
- “Arm A-Profile Architecture Developments 2022,” available at <https://community.arm.com/arm-community-blogs/b/architectures-and-processors-blog/posts/arm-a-profile-architecture-2022#:~:text=The%20base%20permission%20is%20permitted,but%20interpret%20the%20permissions%20differently>
- “An Example of Using Permission Indirection and Permission Overlay Features,” available at <https://developer.arm.com/documentation/102376/0200/Permission-indirection-and-permission-overlay-extensions/An-example-of-using-permission-indirection-and-permission-overlay-features>
- “Summary,” Arm Developer Article ID: KA005620, available at <https://developer.arm.com/documentation/ka005620/latest/#:~:text=Summary,on%20a%20real%20hardware%20platform>
- “Arm Memory Tagging Extension,” available at <https://source.android.com/docs/security/test/memory-safety/arm->

[mte#:~:text=Note:%20This%20document%20covers%20using,on%20each%20load%20and%20store](#)

- “Build and Run an Example Application to Learn about MTE,” available at <https://learn.arm.com/learning-paths/mobile-graphics-and-gaming/mte/mte#:~:text=Log%20an%20issue-.Learn%20about%20the%20Arm%20Memory%20Tagging%20Extension,versions%20of%20Linux%20can%20work>
- “Arm Memory Tagging Extension (MTE),” available at [https://developer.android.com/ndk/guides/arm-mte#:~:text=Pixel%209a%20\(Tegu\)-,MTE%20operating%20modes,switch%20execution%20to%20SYNC%20mode](https://developer.android.com/ndk/guides/arm-mte#:~:text=Pixel%209a%20(Tegu)-,MTE%20operating%20modes,switch%20execution%20to%20SYNC%20mode)
- “Armv8.5-A Memory Tagging Extension,” available at https://developer.arm.com/-/media/Arm%20Developer%20Community/PDF/Arm_Memory_Tagging_Extension_Whitepaper.pdf
- “Back to the Building Blocks: A Path Toward Secure and Measurable Software,” available at <https://bidenwhitehouse.archives.gov/wp-content/uploads/2024/02/Final-ONCD-Technical-Report.pdf>
- “What are Arm-based processors?,” available at: <https://cloud.google.com/discover/what-are-arm-based-processors>
- “How can ARM instruction set architecture improve machine learning applications?,” available at: [https://www.linkedin.com/advice/0/how-can-arm-instruction-set-architecture-improve-7r3oc#:~:text=from%20%20contributions.-,1%20What%20is%20ARM%20ISA%20\(HPC\)%20and%20ML%20applications.&text=The%20ARM%20\(Advanced%20RISC%20Machine,in%20their%20machine%20learning%20applications](https://www.linkedin.com/advice/0/how-can-arm-instruction-set-architecture-improve-7r3oc#:~:text=from%20%20contributions.-,1%20What%20is%20ARM%20ISA%20(HPC)%20and%20ML%20applications.&text=The%20ARM%20(Advanced%20RISC%20Machine,in%20their%20machine%20learning%20applications)
- “Back to the Building Blocks: A Path Toward Secure and Measurable Software,” available at: <https://bidenwhitehouse.archives.gov/wp-content/uploads/2024/02/Final-ONCD-Technical-Report.pdf>

Additional Documents:

- 2025.01.08 Letter from S. Collins to A. Chaplin re QC Architecture License Agreement
- Qualcomm Incorporated Form 10-K for the Fiscal Year Ended September 29, 2024
- Arm Holdings PLC Form 20-F for the Fiscal Year Ended March 31, 2025
- Arm Holdings, Ltd., Registration Statement (Form F-1) (Aug. 21, 2023)

EXHIBIT 3

**United States District Court
District of Delaware
Civil Action No. 1:24-cv-00490-MN**

**Qualcomm Incorporated and
Qualcomm Technologies, Inc.**

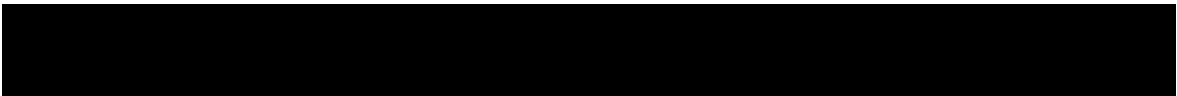
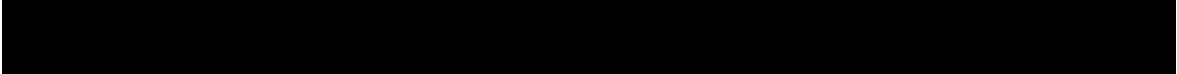


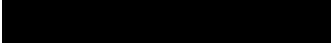
v.

Arm Holdings plc

**Expert Report of Patrick F. Kennedy, Ph.D.
August 8, 2025**

QUALCOMM INCORPORATED AND QUALCOMM TECHNOLOGIES, INC.
v. ARM HOLDINGS PLC

TABLE OF CONTENTS

I.	Introduction	1
II.	Qualifications and Testimony	1
III.	Materials Considered	2
IV.	Case Background.....	3
A.	Relevant Parties	3
i.	Qualcomm.....	3
ii.	Arm Holdings plc	3
B.	Litigation.....	7
C.	Relevant Arm / Qualcomm Licenses	8
i.	Qualcomm ALA	9
ii.	Qualcomm TLA	11
V.	Damages Analysis	15
A.	Framework for Available Remedies	15
B.		
C.		
D.	Comparison of Arm's Proposed License Fees and Royalty Rates for 	23
i.	Proposed License Fees and Royalty Rates vs. Qualcomm's Existing License.....	24
a.	License Fee Comparison.....	24
b.	Royalty Rate Comparison.....	31
ii.	Proposed License Fees and Royalty Rates vs. 	33
a.	License Fee Comparison.....	33
b.	Royalty Rate Comparison.....	36
iii.	Proposed License Fees and Royalty Rates vs. Third-Party Licenses ...	37
E.	Qualcomm's Damages Related to Arm's Alleged Breach of the Implied Covenant of Good Faith and Fair Dealing in the Qualcomm TLA	45
i.	Qualcomm's Existing License to the Peripheral IP	46
ii.	Qualcomm's Requests for License Proposals.....	49
iii.	Arm's 	52

QUALCOMM INCORPORATED AND QUALCOMM TECHNOLOGIES, INC.
V. ARM HOLDINGS PLC

iv.	Arm's [REDACTED]	54
v.	Comparison of License Fees for the Peripheral IP	56
	a. License Fees Proposed vs. Qualcomm's Existing License Fee	56
	b. License Fees Proposed vs. [REDACTED]	60
vi.	Qualcomm's Alleged Peripheral IP License Fee Overpayment.....	63
F.	Qualcomm's Damages Related to Arm's Alleged Intentional Interference and Negligent Interference with Prospective Economic Advantage	68
i.	[REDACTED]	
	[REDACTED]	
	[REDACTED]	
	[REDACTED]	
	[REDACTED]	
G.	Conclusion	80

[illegible]

QUALCOMM INCORPORATED AND QUALCOMM TECHNOLOGIES, INC.
V. ARM HOLDINGS PLC

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

**QUALCOMM INCORPORATED AND QUALCOMM TECHNOLOGIES, INC.
V. ARM HOLDINGS PLC**

I. INTRODUCTION

1. I have been retained by Counsel representing Qualcomm Incorporated and Qualcomm Technologies, Inc. (collectively referred to in this report as “Plaintiffs” or “Qualcomm”) to evaluate damages related to certain claims asserted by Qualcomm against Arm Holdings plc (“Arm” or “Defendant”)¹ related to the alleged wrongful conduct described in Qualcomm’s Second Amended Complaint in this action.² The purpose of my report is to disclose my professional background and experience, the materials subject to my review, and my expert opinions associated with Qualcomm’s claims regarding damages in this matter.

2. This report summarizes my opinions given the information available to me at this time. If I receive additional relevant information, I reserve the right to prepare a supplemental report incorporating this new information.

II. QUALIFICATIONS AND TESTIMONY

3. I am an economist and Managing Director with Stout Risius Ross, LLC (“Stout”). Stout is a professional services firm that provides independent expert testimony, analysis, valuation, and strategic consulting services to clients, along with financial services such as investment banking, advisory, and valuation services. I hold a bachelor’s degree in Economics from the University of California, San Diego and a doctorate in Economics from Stanford University. Prior to joining Stout, I was a Managing Director with Torrey Partners, a Managing

¹ I am aware that there is a pending motion to amend Qualcomm’s Second Amended Complaint to name both Arm Holdings plc and Arm Ltd. as Defendants. Nothing in my analysis and quantification of certain categories of Qualcomm’s claimed damages is dependent on which Arm corporate entity(ies) are named Defendant(s). See Plaintiffs’ Motion for Leave to Amend the Complaint to Name Arm Holdings Plc. And Arm Ltd. as Individual Defendants, August 1, 2025.

² Second Amended Complaint, *Qualcomm Inc. and Qualcomm Technologies, Inc. v. Arm Holdings plc f/k/a Arm Ltd.*, Civil Action No. 1:24-cv-00490-MN, June 3, 2025 (“Second Amended Complaint”), pp. 1-6.

**QUALCOMM INCORPORATED AND QUALCOMM TECHNOLOGIES, INC.
V. ARM HOLDINGS PLC**

Director with LECG, a Shareholder with Mack|Barclay, Inc., a Director of Economic Research with International Securities Group, and an Economist with the Board of Governors of the Federal Reserve System in Washington, D.C. Attached at **Exhibit A** is my curriculum vitae, which summarizes my educational and professional background.

4. My professional experience includes assessing economic damages within and outside of the litigation environment; many of these matters have required my presentation of qualified expert testimony in state and federal courts. Attached at **Exhibit B** is a list of my deposition, arbitration, and trial testimony for the last five years.

5. In this case, Stout is being compensated for my analysis and testimony at a rate of \$950 per hour. In preparing the analysis reflected in this report, I have been assisted by consultants employed by Stout, who performed work under my direction. My compensation is not contingent upon the outcome of this litigation or my opinions.

III. MATERIALS CONSIDERED

6. In connection with my continuing review and analysis, I have considered, reviewed, and relied upon materials and information that may be cited directly in this report and are generally summarized at the attached **Exhibit C**. This information includes pleadings, depositions, documents produced by the parties, third party information, interviews, and other expert reports, all of which I incorporate herein by reference, even if not specifically stated.

**QUALCOMM INCORPORATED AND QUALCOMM TECHNOLOGIES, INC.
v. ARM HOLDINGS PLC**

IV. CASE BACKGROUND

A. Relevant Parties

i. Qualcomm

7. Qualcomm was incorporated in 1985 and is headquartered in San Diego, California.³ Qualcomm is a global leader in the development and commercialization of technologies for the wireless telecommunications (e.g., 3G, 4G, and 5G wireless connectivity) and “high-performance and low-power computing and on-device artificial intelligence” markets.⁴ Qualcomm also provides technologies to markets such as automotive (e.g., connectivity, digital cockpit, advanced driver assistance systems, and automated driving) and internet of things (“IoT”), (e.g., consumer computing, voice and music, extended reality, edge networking, and industrial).⁵ Qualcomm’s handset/smartphone segment generated the majority of Qualcomm’s revenue in FY 2024 (64% of total revenue) and fiscal 2025 year-to-date (63% of total revenue).⁶

ii. Arm Holdings plc

8. Arm was incorporated as Widelogic Limited in 1990 and is headquartered in Cambridge, United Kingdom.⁷ Arm develops and licenses central processing units (“CPUs” or “microprocessors”⁸) and architecture technologies for use in semiconductors and products such as cloud compute, networking equipment, mobile phones, mobile applications, and consumer

³ Qualcomm Incorporated Form 10-K for the fiscal year ended September 29, 2024, pp. 6, 26.

⁴ Qualcomm Incorporated Form 10-K for the fiscal year ended September 29, 2024, p. 6.

⁵ Qualcomm Incorporated Form 10-K for the fiscal year ended September 29, 2024, p. 6.

⁶ Handset Revenue / Total Revenue = \$24,863 / \$38,962 = 64% (revenue in millions, USD); see Qualcomm Incorporated, Form 10-K for the fiscal year ended September 29, 2024, pp. 41, 44. Handset Revenue / Total Revenue = \$20,831 / \$33,013 = 63% (revenue in million, USD); see Qualcomm Incorporated, Form 10-Q for the quarterly period ended June 29, 2025, pp. 5, 10.

⁷ Arm Holdings plc Form 20-F for the fiscal year ended March 31, 2025, pp. 56, 66. Arm Limited is a wholly owned subsidiary of Arm Holdings plc.

⁸ <https://download.intel.com/newsroom/kits/40thanniversary/pdfs/What_is_a_Microprocessor.pdf>.

**QUALCOMM INCORPORATED AND QUALCOMM TECHNOLOGIES, INC.
V. ARM HOLDINGS PLC**

electronics (e.g., wearables, laptops).⁹ Arm states in its annual financial filing for its fiscal year ended March 31, 2025, that it “license[s] [its] products to semiconductor companies, OEMs [(Original Equipment Manufacturers)], and other organizations to design their chips.”¹⁰ Arm further describes that its licenses have multiple components that generate revenue, including license fees, support and maintenance fees, and per-chip royalties.¹¹

9. Arm states that its “CPU products address diverse requirements for performance, power, and size.”¹² Arm also states that it offers complementary products such as graphic processing units (“GPUs”) and neural processing units (“NPUs”) that provide “computing acceleration,” design components “that enable designers to create high-performance” and “secure” chips, and tools and software that support the “development and deployment” of Arm’s products.¹³

10. Arm’s website states that “100% of the world’s population uses Arm based products,” with more than 310 billion Arm-based chips shipped to date.¹⁴ Arm’s CEO, Rene Haas, has described Arm as having “the most ubiquitous computer architecture on the planet.”¹⁵ According to Arm’s SEC filings, Arm has “maintained market share in the mobile applications processor market of greater than 99% for many years, by virtue of all key mobile operating systems depending on Arm processors.”¹⁶

⁹ Arm Holdings plc Form 20-F for the fiscal year ended March 31, 2025, pp. 57, 59-61.

¹⁰ Arm Holdings plc Form 20-F for the fiscal year ended March 31, 2025, p. 61.

¹¹ Arm Holdings plc Form 20-F for the fiscal year ended March 31, 2025, pp. 68-69.

¹² Arm Holdings plc Form 20-F for the fiscal year ended March 31, 2025, p. 57.

¹³ Arm Holdings plc Form 20-F for the fiscal year ended March 31, 2025, pp. 9, 58-59.

¹⁴ <<https://www.arm.com/company>>.

¹⁵ “Rene Haas: ‘Arm has the most ubiquitous computer architecture on the planet,’” Financial Times, June 7, 2024, <<https://www.ft.com/content/5b191c4c-119f-4f97-bc61-622d20bfa46d>>.

¹⁶ Arm Holdings plc Form 20-F for the fiscal year ended March 31, 2025, pp. 59.

QUALCOMM INCORPORATED AND QUALCOMM TECHNOLOGIES, INC.
v. ARM HOLDINGS PLC

11. Jonathan Weiser, Former Lead Attorney at QCT,¹⁷ testified that he “believe[s] that Arm [has] a monopoly in the mobile space, wireless space, cell phone technology with regard to its adoption” of its instruction set architecture.¹⁸ In an Arm Global Finance Conference 2021 presentation, Arm stated that “Arm’s success has come from the wide accessibility of its architecture” and “its fostering of an enormous ecosystem of developers.”¹⁹ Arm further states that it has an “unparalleled software ecosystem” and that “no other business ecosystem comes close to this group of silicon, system and software companies.”²⁰ Arm claims that its ecosystem has “over 22 million developers building on Arm” as of May 2025.²¹

12. However, Arm appears to be shifting its strategy to make chips in house, much like architecture license partners Qualcomm and NVIDIA. In a February 2025 article, the *Financial Times* reported that “Arm plans to launch its own [semiconductor] chip...made in-house.”²² The *Financial Times* described that Arm previously “design[ed] the basic building blocks of a chip” and that this move is a “radical change to the...business model of licensing its blueprints to the likes of Apple and Nvidia.”²³ Mr. Haas testified [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED].²⁴

13. [REDACTED]

[REDACTED]

¹⁷ Deposition of Jonathan Weiser, July 11, 2025, p. 55. I understand that “QCT” refers to “Qualcomm CDMA Technologies” and is Qualcomm’s “semiconductor business.” See Qualcomm Incorporated, Form 10-K for the fiscal year ended September 29, 2024, p. 7.

¹⁸ Deposition of Jonathan Weiser, July 11, 2025, pp. 8-9.

¹⁹ ARMQC_02727610-629 at ‘617.

²⁰ ARMQC_02720799-800 at ‘799; ARMQC_00001136-163 at ‘142.

²¹ <<https://newsroom.arm.com/blog/arm-computex-2025>>.

²² <<https://www.ft.com/content/95367b2b-2aa7-4a06-bdd3-0463c9bad008>>.

²³ <<https://www.ft.com/content/95367b2b-2aa7-4a06-bdd3-0463c9bad008>>.

²⁴ Deposition of Rene Haas, July 7, 2025, pp. 221, 225.

25 Deposition of Rene Haas, July 7, 2025, pp. 221, 225; <<https://www.ft.com/content/95367b2b-2aa7-4a06-bdd3-0463c9bad008>>.

26 Deposition of Rene Haas, July 7, 2025, pp. 209, 212.

27 Deposition of Lynn Couillard, July 3, 2025, p. 13.

28 Deposition of Lynn Couillard, July 3, 2025, pp. 122, 132.

29 Deposition of Lynn Couillard, July 3, 2025, pp. 122-124.

30 Deposition of Lynn Couillard, July 3, 2025, pp. 125-126.

31 Deposition of Mohamed Awad, July 29, 2025, pp. 7-8.

32 Deposition of Mohamed Awad, July 29, 2025, pp. 40-41.

33 Deposition of Rene Haas, July 7, 2025, p. 186.

QUALCOMM INCORPORATED AND QUALCOMM TECHNOLOGIES, INC.
v. ARM HOLDINGS PLC

B. Litigation

15. On August 31, 2022, Arm filed a complaint against Qualcomm and NuVia, Inc. (“Nuvia”) for breach of contract – specific performance, declaratory judgment and trademark infringement under 15 U.S.C § 1114, and declaratory judgment and false designation under 15 U.S.C § 1125 in the U.S. District Court for the District of Delaware.³⁶ Qualcomm and Nuvia responded with an amended counterclaim filed on October 26, 2022, seeking a declaratory judgment that the defending parties did not breach Nuvia’s license agreements with Arm.³⁷ Qualcomm also sought a declaratory judgment that its custom CPU products were licensed under Qualcomm’s architecture license agreement with Arm.³⁸ The parties proceeded to a combined bench and jury trial from December 13, 2024 to December 20, 2024.³⁹ The jury found that Qualcomm did not breach the architecture license agreement between Arm and Nuvia and that Qualcomm’s CPUs that include designs acquired in the Nuvia acquisition are licensed under the architecture license agreement between Arm and Qualcomm.⁴⁰ The jury did not reach a verdict on Arm’s claim that Nuvia breached the architecture license agreement between Arm and Nuvia.⁴¹

³⁴ Deposition of Rene Haas, July 7, 2025, pp. 190-191.

³⁵ Deposition of Rene Haas, July 7, 2025, pp. 196-197.

³⁶ Complaint, *Arm Ltd. v. Qualcomm Inc., Qualcomm Technologies, Inc. and Nuvia, Inc.*, Civil Action No. 1:22-cv-01146-MN, August 31, 2022.

³⁷ Defendants’ Answer and Defenses to Plaintiff’s Complaint and Jury Demand and Defendants’ Amended Counterclaim, October 26, 2022, p. 80.

³⁸ Defendants’ Answer and Defenses to Plaintiff’s Complaint and Jury Demand and Defendants’ Amended Counterclaim, October 26, 2022, p. 80.

³⁹ Opening Brief in Support of Defendant NuVia, Inc.’s Renewed Motions for Judgment as a Matter of Law, January 17, 2025, p. 1.

⁴⁰ Opening Brief in Support of Defendant NuVia, Inc.’s Renewed Motions for Judgment as a Matter of Law, January 17, 2025, p. 1.

⁴¹ Opening Brief in Support of Defendant NuVia, Inc.’s Renewed Motions for Judgment as a Matter of Law, January 17, 2025, p. 1.

**QUALCOMM INCORPORATED AND QUALCOMM TECHNOLOGIES, INC.
v. ARM HOLDINGS PLC**

16. On April 18, 2024, Qualcomm filed a complaint (the “Complaint”) against Arm for two counts, including declaratory judgment and breach of [REDACTED] of the parties’ architecture license agreement.⁴² On December 16, 2024, Qualcomm filed a first amended complaint (the “First Amended Complaint”) against Arm that added claims for breach of the implied covenant of good faith and fair dealing, intentional interference with prospective economic advantage, negligent interference with prospective economic advantage, and violations of California unfair competition law under California Business and Professions Code §§ 17200 *et seq*, in addition to the aforementioned counts alleged in the Complaint.⁴³ On June 3, 2025, Qualcomm filed its second amended complaint (the “Second Amended Complaint”) against Arm that added claims for Arm’s contractual breach of sections [REDACTED] of the parties’ technology license agreement.⁴⁴

C. Relevant Arm / Qualcomm Licenses

17. I understand that Arm licenses its technology under agreements including architecture license agreements (“ALA”) and technology licensing agreements (“TLA”).⁴⁵ Arm states that “architecture licensees [under an ALA] will often also license Arm CPU designs [under a TLA] to use either as a complementary processor alongside the licensee’s Arm-compliant CPU design, or in other chips where the licensee’s own design is unsuitable.”⁴⁶

⁴² Complaint, *Qualcomm Incorporated, Qualcomm Technologies, Inc., v. Arm Holdings Plc.*, Civil Action No. 24-490-MN, April 18, 2024 (“Complaint”), pp. 20-21, 23.

⁴³ First Amended Complaint, *Qualcomm Incorporated, Qualcomm Technologies, Inc., v. Arm Holdings Plc.*, Civil Action No. 24-490-MN, December 16, 2024 (“First Amended Complaint”), pp. 39-47.

⁴⁴ Second Amended Complaint, pp. 52-65.

⁴⁵ Arm Holdings plc Form 20-F for the fiscal year ended March 31, 2025, pp. 67-68.

⁴⁶ Arm Holdings plc Form 20-F for the fiscal year ended March 31, 2025, p. 68.

QUALCOMM INCORPORATED AND QUALCOMM TECHNOLOGIES, INC.
v. ARM HOLDINGS PLC

18. Under an Arm ALA, a licensee develops custom CPU designs that are compliant with the Arm instruction set architecture (“ISA”) for a fixed architecture license fee.⁴⁷ Under a TLA, Arm licenses a “single CPU design or other technology design to a customer in return for a fixed license fee.”⁴⁸ Arm also states that it “generate[s] the majority of [its] revenue from customers who enter into license agreements, pursuant to which [Arm] receive[s] royalty fees based on average selling price of the customer’s Arm-based chip or a fixed fee per chip.”⁴⁹ Arm describes that the TLA “may be limited by term (i.e., the number of years during which the licensee is entitled to incorporate [Arm’s] products in new chip designs, but licensees typically have the right to manufacture designs perpetually) and/or by number of uses (i.e., the number of concurrent chip designs that may use [Arm’s] products).”⁵⁰

i. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

⁴⁷ Arm Holdings plc Form 20-F for the fiscal year ended March 31, 2025, p. 68.

⁴⁸ Arm Holdings plc Form 20-F for the fiscal year ended March 31, 2025, p. 68; *see, e.g.*, ARMQC_02747848-867 at ‘866-867.

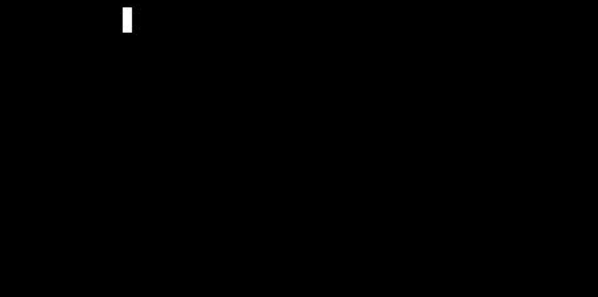
⁴⁹ Arm Holdings plc Form 20-F for the fiscal year ended March 31, 2025, p. 68.

⁵⁰ Arm Holdings plc Form 20-F for the fiscal year ended March 31, 2025, p. 68.

⁵¹ I understand that Qualcomm Global Trading PTE Ltd. is a subsidiary of Qualcomm. *See* <<https://www.sec.gov/Archives/edgar/data/804328/000080432824000075/qcom092924ex21.htm>>. I refer to Qualcomm Global Trading PTE Ltd. as “Qualcomm” at times throughout my report.

⁵² ARM_00055357-399 at ‘357.

⁵³ ARM_00055357-399 at ‘357, ‘360, ‘363; QCARM_0343120-142; QCARM_0338573-576; QCVARM_1015821-843. I understand that Arm refers to the “v8-A” architecture as “v8.”



STOUT RISIUS ROSS, LLC
HIGHLY CONFIDENTIAL – ATTORNEYS' EYES ONLY

QUALCOMM INCORPORATED AND QUALCOMM TECHNOLOGIES, INC.
V. ARM HOLDINGS PLC

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

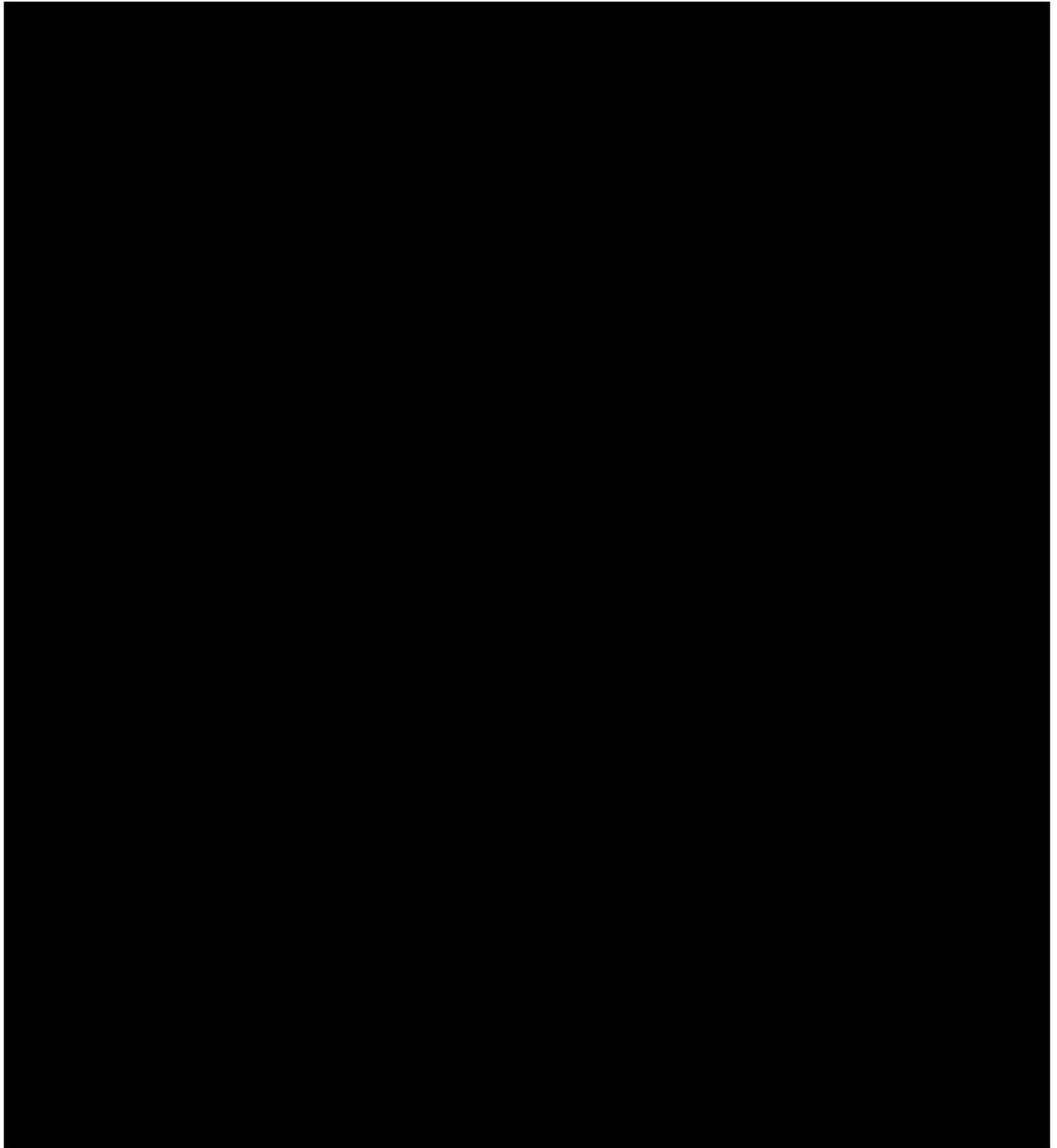
ii. Qualcomm TLA

[REDACTED]

[REDACTED]

⁵⁹ ARM_00055357-399 at '373.
⁶⁰ QCVARM_1015821-843 at '821, '827.
⁶¹ QCVARM_1015821-843 at '834-835.
⁶² QCVARM_1015821-843 at '833.
⁶³ QCARM_0343533-587 at '533.
⁶⁴ QCARM_0343533-587 at '533, '535, '537.
⁶⁵ QCARM_0343533-587 at '541.
⁶⁶ QCARM_0343533-587 at '552.
⁶⁷ QCARM_0343533-587 at '545-546.

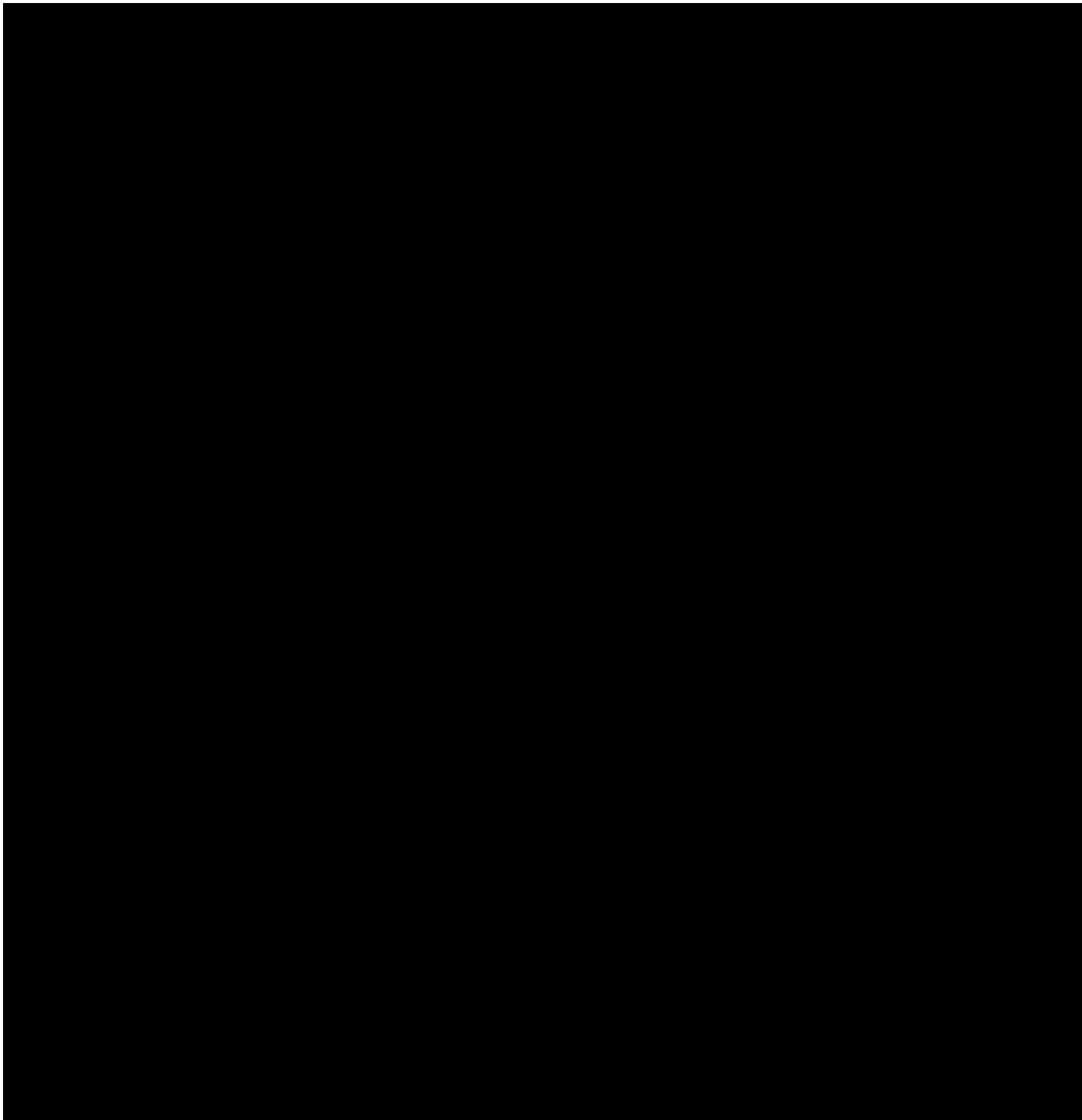
**QUALCOMM INCORPORATED AND QUALCOMM TECHNOLOGIES, INC.
V. ARM HOLDINGS PLC**



⁶⁸ QCARM_0343533-587 at '545.

⁶⁹ QCARM_0343533-587 at '546.

**QUALCOMM INCORPORATED AND QUALCOMM TECHNOLOGIES, INC.
v. ARM HOLDINGS PLC**



⁷⁰ QCARM_0343533-587 at '546.
⁷¹ QCARM_0343533-587 at '546.
⁷² ARMQC_02747848-867 at '848.

QUALCOMM INCORPORATED AND QUALCOMM TECHNOLOGIES, INC.
v. ARM HOLDINGS PLC

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

D. Comparison of Arm's Proposed License Fees and Royalty Rates for [REDACTED]

48. As part of the [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED].¹²⁴ Each respective term license had the following proposed license fees for [REDACTED]

[REDACTED].

[REDACTED]

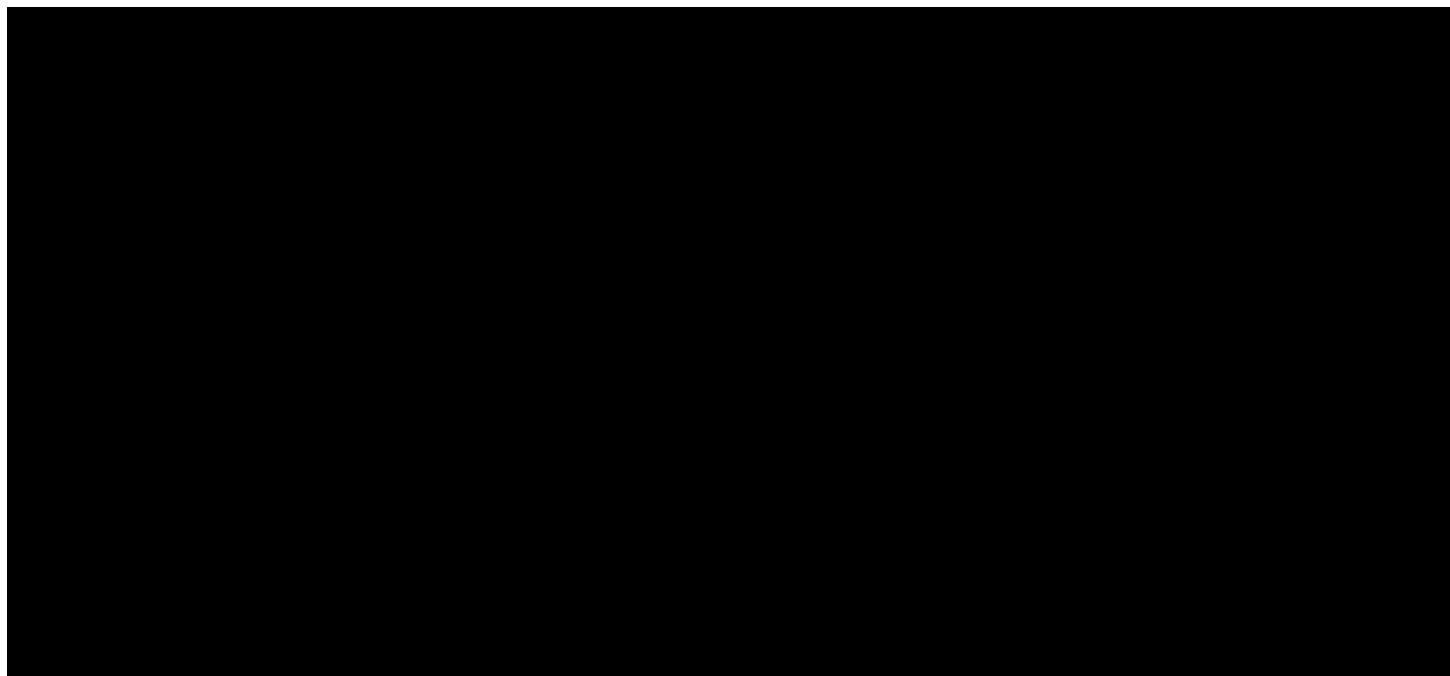
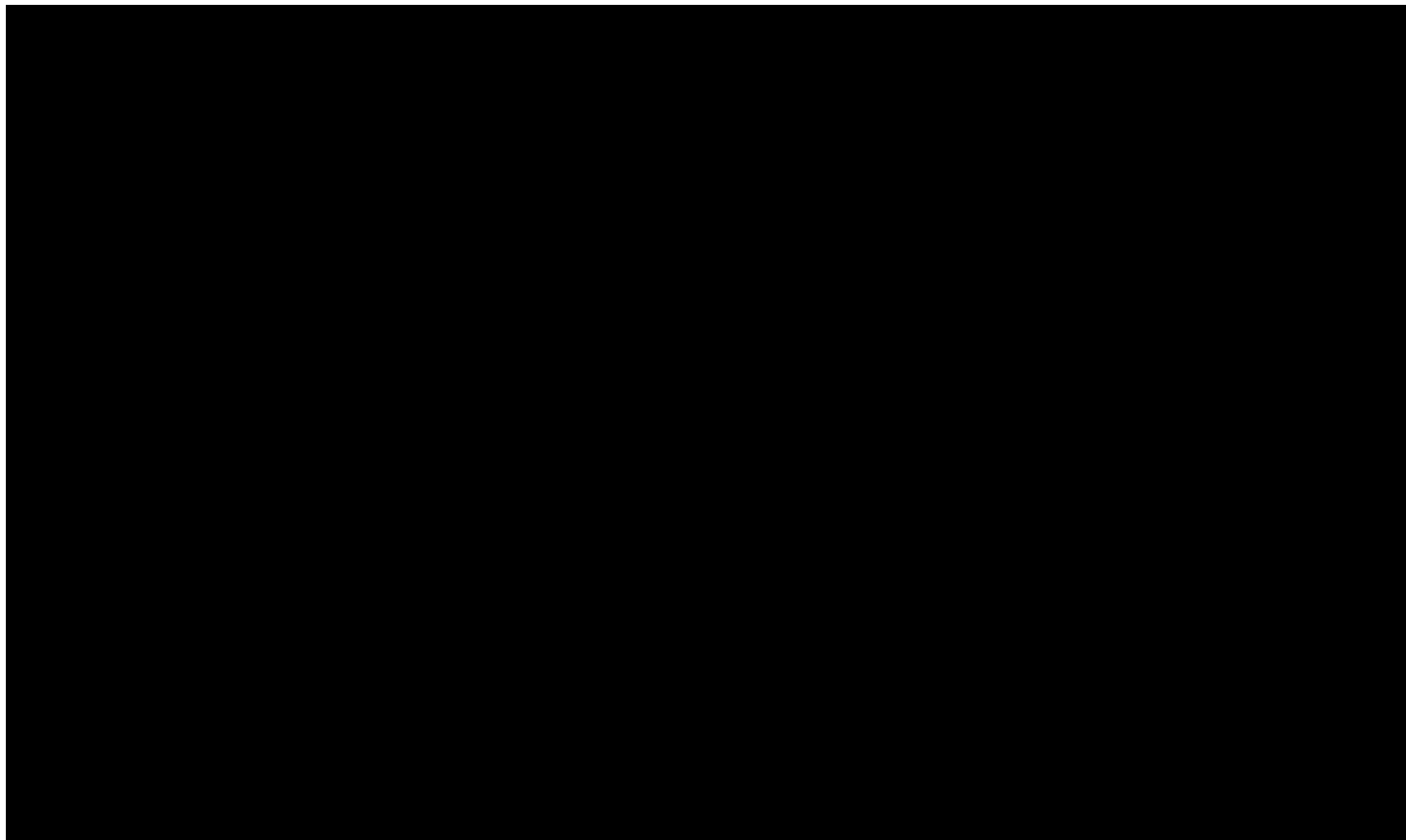
¹²² Second Amended Complaint, pp. 39-40.

¹²³ QCVARM_0616967-969 at '968.

¹²⁴ QCVARM_0616967-969 at '969.

¹²⁵ QCVARM_0616967-969 at '968.

**QUALCOMM INCORPORATED AND QUALCOMM TECHNOLOGIES, INC.
v. ARM HOLDINGS PLC**



¹²⁶ QCVARM_0616967-969 at '968. Figure contains screen shot from [REDACTED].

**QUALCOMM INCORPORATED AND QUALCOMM TECHNOLOGIES, INC.
v. ARM HOLDINGS PLC**

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

**E. Qualcomm's Damages Related to Arm's Alleged Breach of the Implied
Covenant of Good Faith and Fair Dealing in the Qualcomm TLA**

83. I understand that Qualcomm asserts claims related to Arm's alleged breach of the implied covenant of good faith and fair dealing in the Qualcomm TLA due to, among other things, Arm's bad faith licensing proposals for IP including [REDACTED]

¹⁹¹ Second Amended Complaint, pp. 34-38.

¹⁹² Arm's First Supplemental Objections and Responses to Qualcomm's Second Set of Interrogatories (Nos. 4-11), July 11, 2025, p. 60.

¹⁹³ Arm's First Supplemental Objections and Responses to Qualcomm's Second Set of Interrogatories (Nos. 4-11), July 11, 2025, p. 60.

QUALCOMM INCORPORATED AND QUALCOMM TECHNOLOGIES, INC.
v. ARM HOLDINGS PLC



ii. Qualcomm's Requests for License Proposals

87. Qualcomm [REDACTED]

[REDACTED] Qualcomm's current license to [REDACTED] expires in [REDACTED], and Qualcomm communicated to Arm that it wished to extend its license for an additional [REDACTED] years [REDACTED]

[REDACTED]²¹³ On [REDACTED], Qualcomm also contacted Arm and stated [REDACTED]

[REDACTED] [REDACTED]

[REDACTED] [REDACTED]²¹⁴ On [REDACTED], Dawn Hill, former Director of Global Sales at Arm and former "account manager for Qualcomm from Arm,"²¹⁵ communicated to Qualcomm personnel that [REDACTED]

²¹¹ QCARM_0027985-986 at '985; ARM_00062474-493 at '488.

²¹² QCVARM_0608131-138 at '133-134.

²¹³ QCVARM_0608131-138 at '133-134.

²¹⁴ QCVARM_0613037-039 at '037-038.

²¹⁵ <<https://www.linkedin.com/in/dawn-hill-montemagni/>>; 30(b)(6) Deposition of Jeffrey Fonseca, July 9, 2025, p. 81.

QUALCOMM INCORPORATED AND QUALCOMM TECHNOLOGIES, INC.
v. ARM HOLDINGS PLC

[REDACTED] 216

Based on email correspondence between Qualcomm and Arm, the parties again discussed Arm

[REDACTED]

without an agreement.²¹⁷

88. In [REDACTED], Kurt Wolf, Director of Strategic Sourcing and Licensing at Qualcomm,²¹⁸ sent an email to Ms. Hill and stated “as requested by Arm, [Qualcomm] has waited a while since our last discussions” [REDACTED]

[REDACTED]

[REDACTED].²¹⁹ In the same email, Mr. Wolf also expressed [REDACTED]

[REDACTED], which is also set to [REDACTED].²²⁰

89. On [REDACTED], Qualcomm communicated its [REDACTED] [REDACTED] at the following weekly meeting with Arm.²²¹ A week later, Qualcomm followed up for proposed meeting times, as Arm did not respond to the previous email.²²² Arm replied that it was “waiting on the internal approval to proceed with this meeting. As soon as [Arm has] approval, [Arm] will reach out with day/time options.”²²³ On [REDACTED], Qualcomm sent a third follow-up email for proposed meeting times with Arm.²²⁴ In its communications, Qualcomm requested a meeting with Will Abbey, Executive Vice President and Chief Commercial Officer at Arm,²²⁵ to discuss Qualcomm’s [REDACTED]

²¹⁶ QCVARM_0608131-138 at ‘131.

²¹⁷ QCVARM_0524007-011.

²¹⁸ <<https://www.linkedin.com/in/siliconip/>>.

²¹⁹ QCVARM_0616935.

²²⁰ QCVARM_0616935.

²²¹ QCVARM_0618338-340 at ‘339.

²²² QCVARM_0618338-340 at ‘339.

²²³ QCVARM_0618338-340 at ‘339.

²²⁴ QCVARM_0618338-340 at ‘338.

²²⁵ Deposition of Will Abbey, June 26, 2025, p. 8.

QUALCOMM INCORPORATED AND QUALCOMM TECHNOLOGIES, INC.
v. ARM HOLDINGS PLC

[REDACTED].²²⁶ Qualcomm stated that Mr. Abbey should hear “why [Qualcomm] needs replies, consistent with [its] long-standing partnership, from Arm so [the parties] can continue to develop and deliver products to [Qualcomm] customers.”²²⁷

90. Qualcomm and Arm scheduled a meeting for [REDACTED], but postponed the meeting to the following week when Mr. Abbey would be able to provide a response on the

[REDACTED].²²⁸ Based on internal email correspondence between Qualcomm personnel, Mr. Wolf described Mr. Abbey’s response as including the [REDACTED]

[REDACTED]

[REDACTED]²²⁹

91. I understand from testimony of Qualcomm personnel that its products have relatively long development life cycles necessitating advance planning prior to tape out. Kurt Wolf, Director of Strategic Sourcing and Licensing at Qualcomm,²³⁰ testified that “it is typical to take at least three years from the beginning of a design to being able to ship silicon.”²³¹ Larissa Cochran, Senior Director of Contracts at Qualcomm,²³² also testified that Qualcomm’s “products have a relatively long life cycle,” that Qualcomm’s “products are on the roadmap about two to three years in advance,” and mentioned the “design, manufacturing, the verification time” that needs to occur before a product launches.²³³ Ms. Cochran further testified, as an example, that Qualcomm signed a license agreement for [REDACTED] 2019, “but [REDACTED] were not even commercially available until 2022[,] ... about a three-year timeframe.”²³⁴ Ziad

²²⁶ QCVARM_0618338-340 at ‘338.

²²⁷ QCVARM_0618338-340 at ‘338.

²²⁸ QCVARM_0523826-831 at ‘826-827.

²²⁹ QCVARM_0525344-353 at ‘350-‘351.

²³⁰ Deposition of Kurt Wolf, June 25, 2025, p. 16.

²³¹ Deposition of Kurt Wolf, June 25, 2025, p. 28.

²³² Deposition of Larissa Cochran, July 11, 2025, p. 11.

²³³ Deposition of Larissa Cochran, July 11, 2025, p. 113.

²³⁴ Deposition of Larissa Cochran, July 11, 2025, p. 114.

QUALCOMM INCORPORATED AND QUALCOMM TECHNOLOGIES, INC.
v. ARM HOLDINGS PLC

Asghar, Senior Vice President and General Manager of XR & Spatial Computing at Qualcomm,²³⁵ similarly testified that “the product cycle in silicon is very long. So if it's [REDACTED] you're already planning for these parts in [2026].”²³⁶ Jeffrey Fonseca, Director of Sales at Arm,²³⁷ who is also the “partner manager for Qualcomm” at Arm, also testified that to his knowledge, Qualcomm planned its roadmaps “two years in advance.”²³⁸ Additionally, the “SoftBank Group Report 2025” included a “message from Arm CEO,” Mr. Haas, which stated that “it takes Arm’s customers time to develop the complex chips that contain Arm technology, with royalties typically materializing 2-3 years after licensing.”²³⁹

92. As noted above, on [REDACTED], Qualcomm provided Arm with written notice alleging Arm’s breach of the Qualcomm TLA, including in relation to [REDACTED]

[REDACTED] [REDACTED]
[REDACTED] Qualcomm stated in this letter that it had [REDACTED]
[REDACTED]
[REDACTED]²⁴¹

iii. Arm’s [REDACTED]

93. As discussed above, on [REDACTED]
[REDACTED] [REDACTED]
[REDACTED] [REDACTED]
[REDACTED]

²³⁵ Exhibit 1 to Deposition of Ziad Asghar, July 7, 2025.

²³⁶ Deposition of Ziad Asghar, July 7, 2025, p. 99.

²³⁷ 30(b)(6) Deposition of Jeffrey Fonseca, July 9, 2025, p. 11.

²³⁸ 30(b)(6) Deposition of Jeffrey Fonseca, July 9, 2025, p. 88.

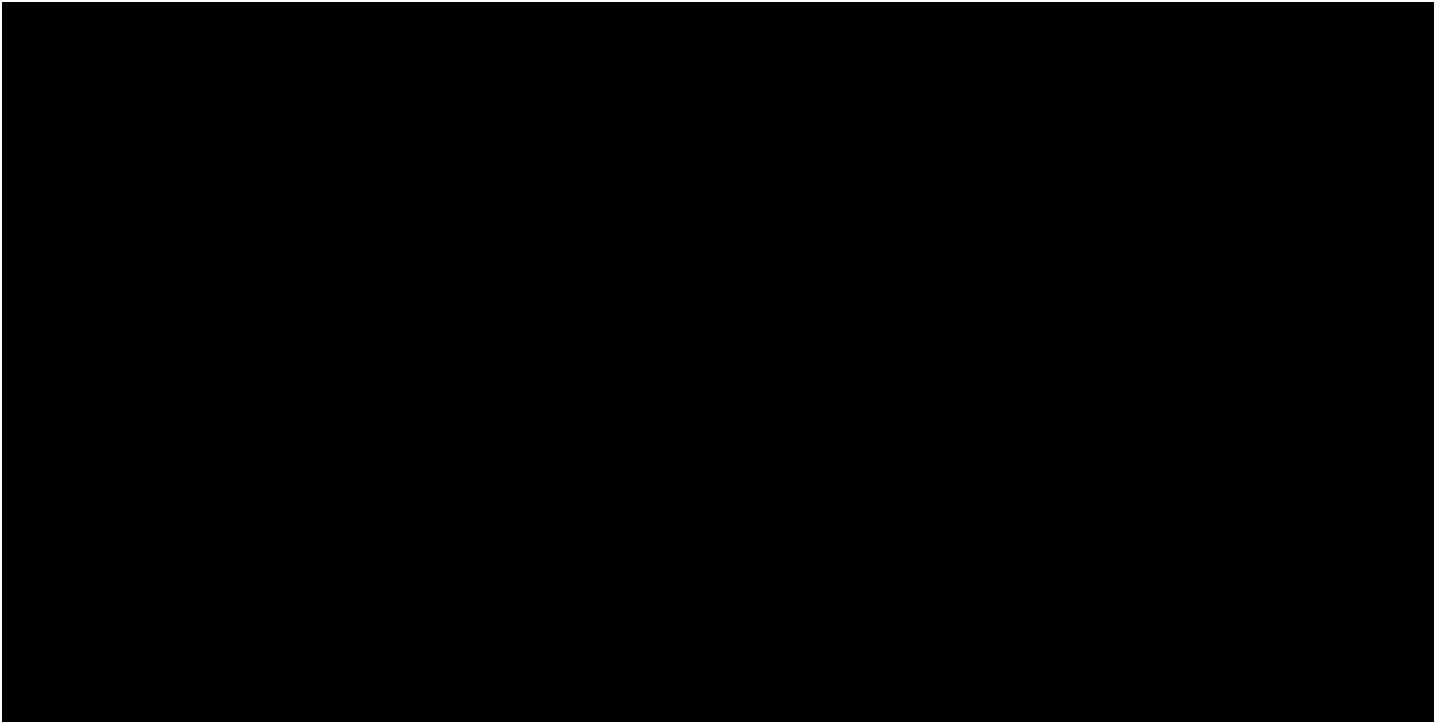
²³⁹ <https://group.softbank/en/ir/financials/annual_reports/2025/message/arm>.

²⁴⁰ QCVARM_0616952-954 at ‘953.

²⁴¹ QCVARM_0616952-954 at ‘953-‘954.

²⁴² QCVARM_0616967-969.

QUALCOMM INCORPORATED AND QUALCOMM TECHNOLOGIES, INC.
v. ARM HOLDINGS PLC



94. On [REDACTED]

[REDACTED].²⁴⁷ In this letter, Qualcomm asked Arm to [REDACTED]

[REDACTED]

[REDACTED]²⁴⁸ According to testimony from Larissa Cochran, Senior Director of Contracts at Qualcomm,²⁴⁹ while Qualcomm “disagreed that the price should increase” for the Peripheral IP, Qualcomm felt it “could absorb” the additional cost associated with the [REDACTED] license for a [REDACTED] year term.²⁵⁰

²⁴³ QCVARM_0616967-969 at ‘968.

²⁴⁴ QCVARM_0616967-969 at ‘969.

²⁴⁵ QCVARM_0616967-969 at ‘968.

²⁴⁶ QCVARM_0616967-969 at ‘968.

²⁴⁷ QCVARM_0618354.

²⁴⁸ QCVARM_0618354.

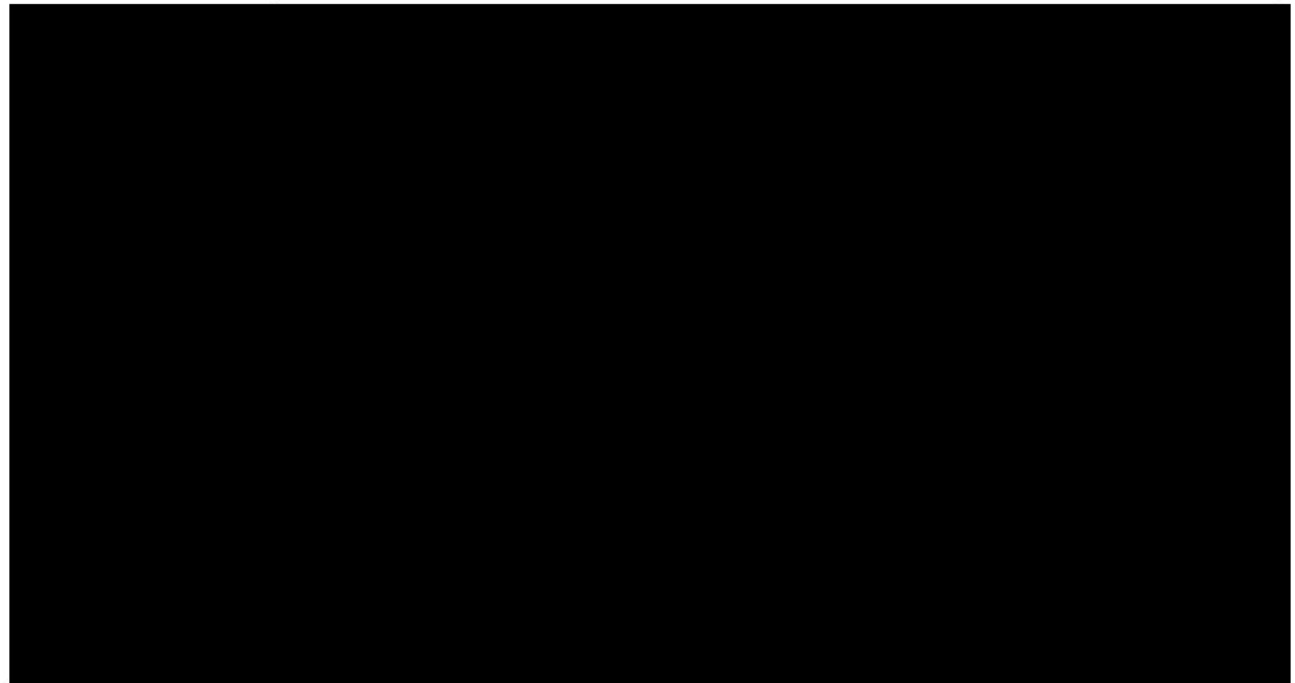
²⁴⁹ Deposition of Larissa Cochran, July 11, 2025, p. 11.

²⁵⁰ Deposition of Larissa Cochran, July 11, 2025, p. 135.

QUALCOMM INCORPORATED AND QUALCOMM TECHNOLOGIES, INC.
V. ARM HOLDINGS PLC

iv. Arm's [REDACTED]

95. On [REDACTED]



251 QCVARM_0527544-545 at '544.

252 QCVARM_0527544-545 at '544.

253

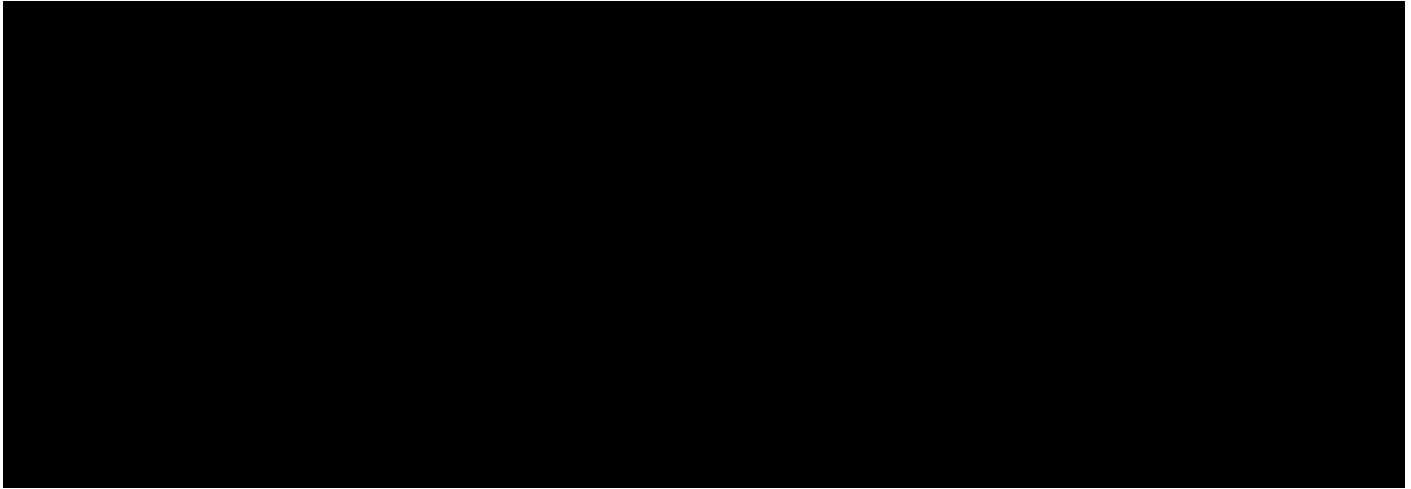
See Figure 15 and Figure 16.

254 QCVARM_0527546-548 at '547.

QUALCOMM INCORPORATED AND QUALCOMM TECHNOLOGIES, INC.
V. ARM HOLDINGS PLC

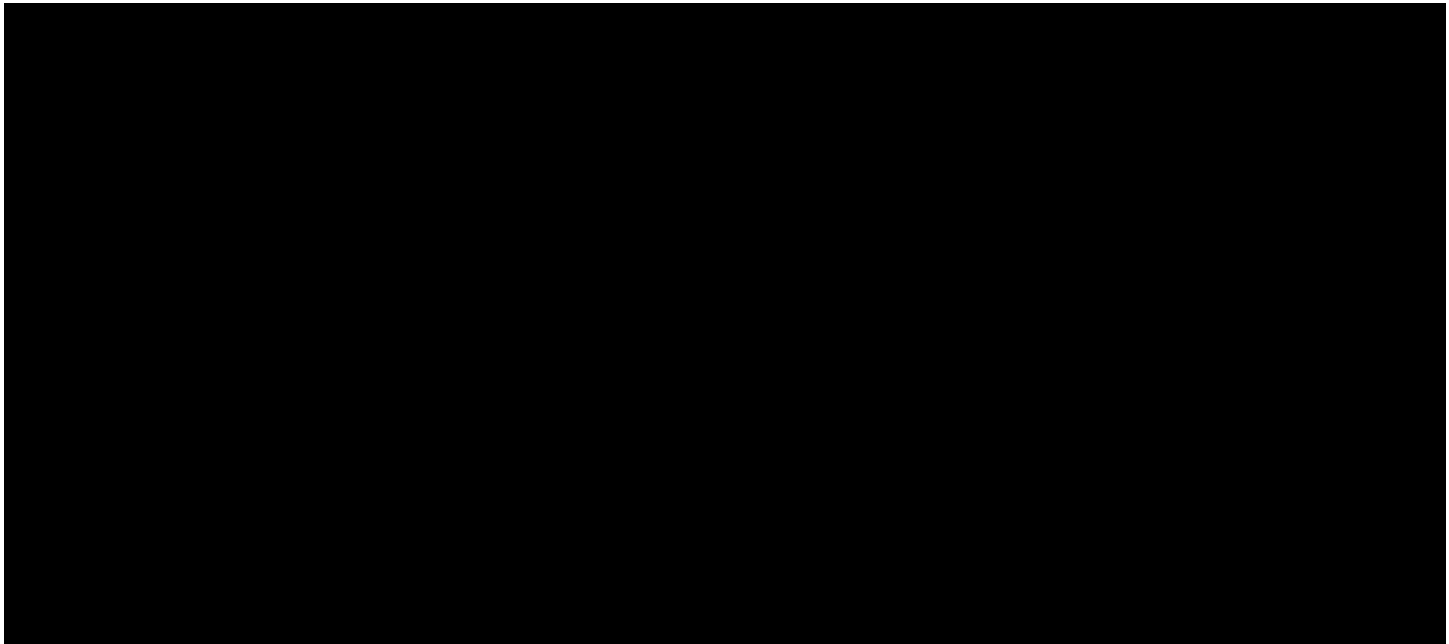
Figure 16: Arm's Proposed License Fees for the Peripheral IP per the [REDACTED]

[REDACTED]²⁵⁵



96. Based on the documents discussed below, I understand that Qualcomm accepted

Arm's [REDACTED].



²⁵⁵ QCVARM_0527546-548 at '547.

²⁵⁶ QCVARM_0573056-057 at '056.

²⁵⁷ QCVARM_0573056-057 at '056.

²⁵⁸ QCVARM_0573056-057 at '056-057.

²⁵⁹ QCVARM_0573056-057 at '056.

²⁶⁰ QCVARM_0573056-057 at '057.

QUALCOMM INCORPORATED AND QUALCOMM TECHNOLOGIES, INC.
v. ARM HOLDINGS PLC

[REDACTED]

v. Comparison of License Fees for the Peripheral IP

98. As described below, [REDACTED]

[REDACTED]

a. License Fees Proposed vs. Qualcomm's Existing License Fee

[REDACTED]

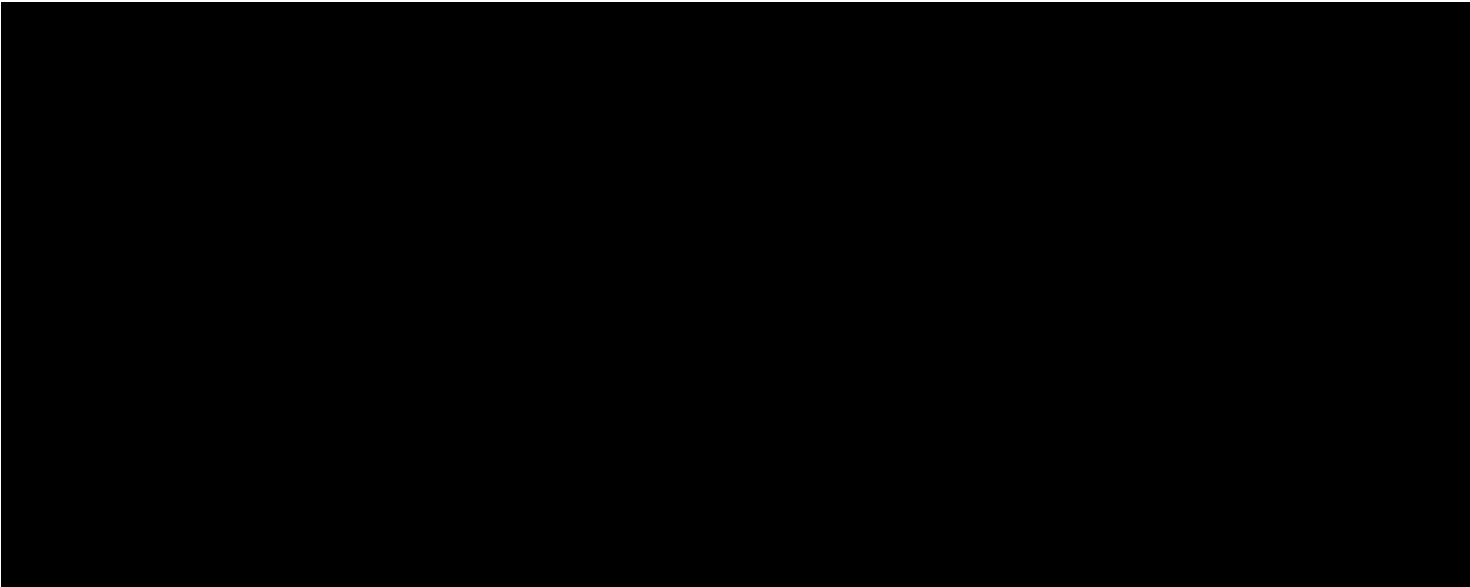
²⁶¹ QCVARM_1118081-084; QCVARM_1118085-088.

²⁶² QCVARM_1121930; QCVARM_1121931.

²⁶³

²⁶⁴ Schedule 5.

QUALCOMM INCORPORATED AND QUALCOMM TECHNOLOGIES, INC.
v. ARM HOLDINGS PLC



110. As shown in the figure above, for each license option and for each Peripheral IP, Arm proposed significantly more than the [REDACTED]
[REDACTED]
[REDACTED]. This comparison suggests that the [REDACTED]-year term Peripheral IP license fees Arm [REDACTED]
[REDACTED]
[REDACTED]

vi. Qualcomm's Alleged Peripheral IP License Fee Overpayment

111. As discussed above, Qualcomm alleges that Arm's proposals for the Peripheral IP are commercially unreasonable and made in bad faith.²⁸³ I have been asked by Qualcomm's counsel to calculate the amount that Qualcomm overpaid for its [REDACTED]
[REDACTED].²⁸⁴ Qualcomm's alleged overpayment is based on a comparison of

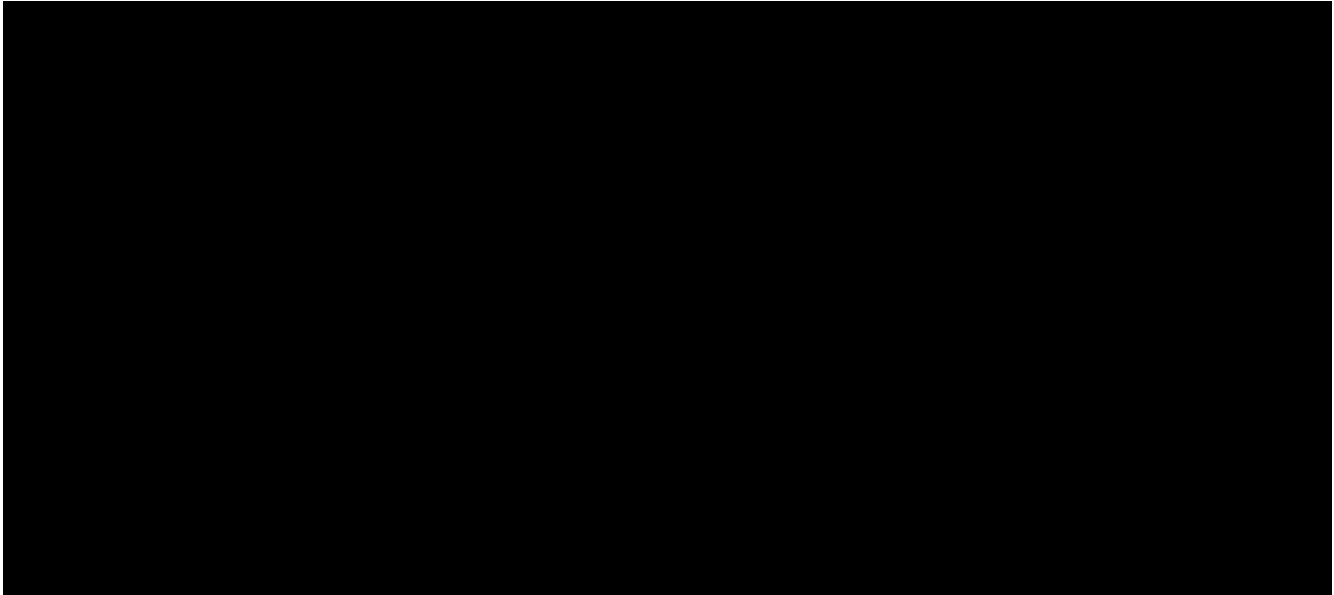
²⁸² Schedule 3.4.

²⁸³ Plaintiffs' Supplemental Responses and Objections to Defendant's First Set of Interrogatories (nos. 1-9), July 11, 2025, p. 13; Second Amended Complaint, p. 34.

²⁸⁴ QCVARM_0573056-057 at '056.

QUALCOMM INCORPORATED AND QUALCOMM TECHNOLOGIES, INC.
V. ARM HOLDINGS PLC

what Qualcomm paid versus a but-for price reflecting commercially reasonable license fees. I



[REDACTED]. Further, I understand that Qualcomm remains one of Arm's "major" customers and accounted for approximately \$400 million of Arm's revenue in fiscal year 2025.²⁸⁵ Even with the reduced scope of licensing that Qualcomm asserts is at least in part due to Arm's alleged wrongful conduct, Qualcomm remains one of Arm's largest customers. [REDACTED]

[REDACTED]

[REDACTED]

112. Additionally, I understand that the Peripheral IP that Qualcomm [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

²⁸⁵ Arm states in its Form 20-F that Qualcomm "accounted for 10% of our total revenue for the fiscal year ended March 31, 2025," and Arm reported total revenue of approximately \$4 billion. $\$4,000,000,000 \times 10\% = \$400,000,000$. See Arm Holdings plc Form 20-F for the fiscal year ended March 31, 2025, pp. 29, 72.

²⁸⁶ Conversation with Larissa Cochran.

QUALCOMM INCORPORATED AND QUALCOMM TECHNOLOGIES, INC.
v. ARM HOLDINGS PLC

consistent list price for the [REDACTED]

[REDACTED]

[REDACTED]

113. Further, as described above, Arm has produced only a limited set of license agreements with incomplete information. Without additional information, I cannot fully assess whether there has been any change in Arm's [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

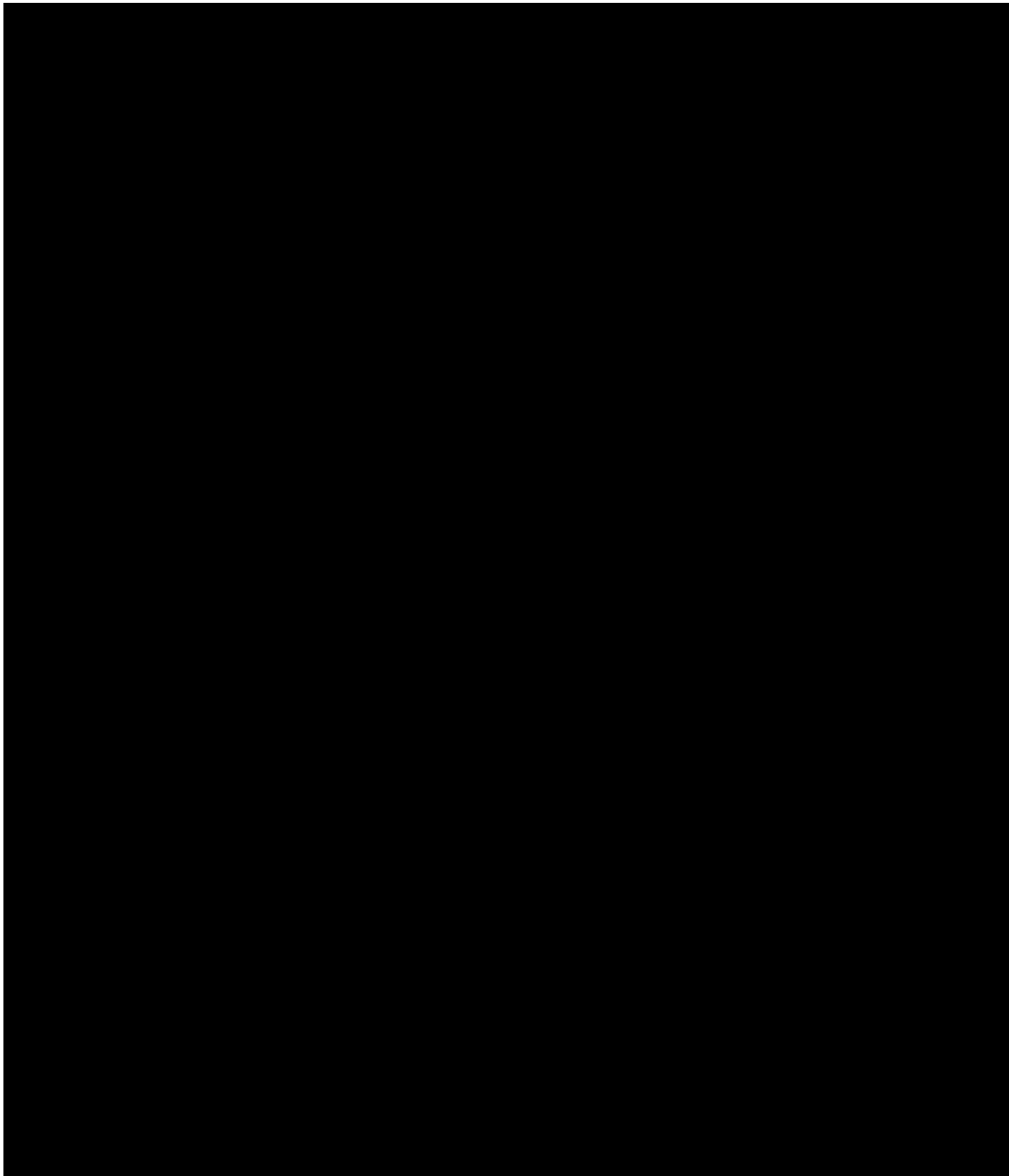
[REDACTED]

[REDACTED]

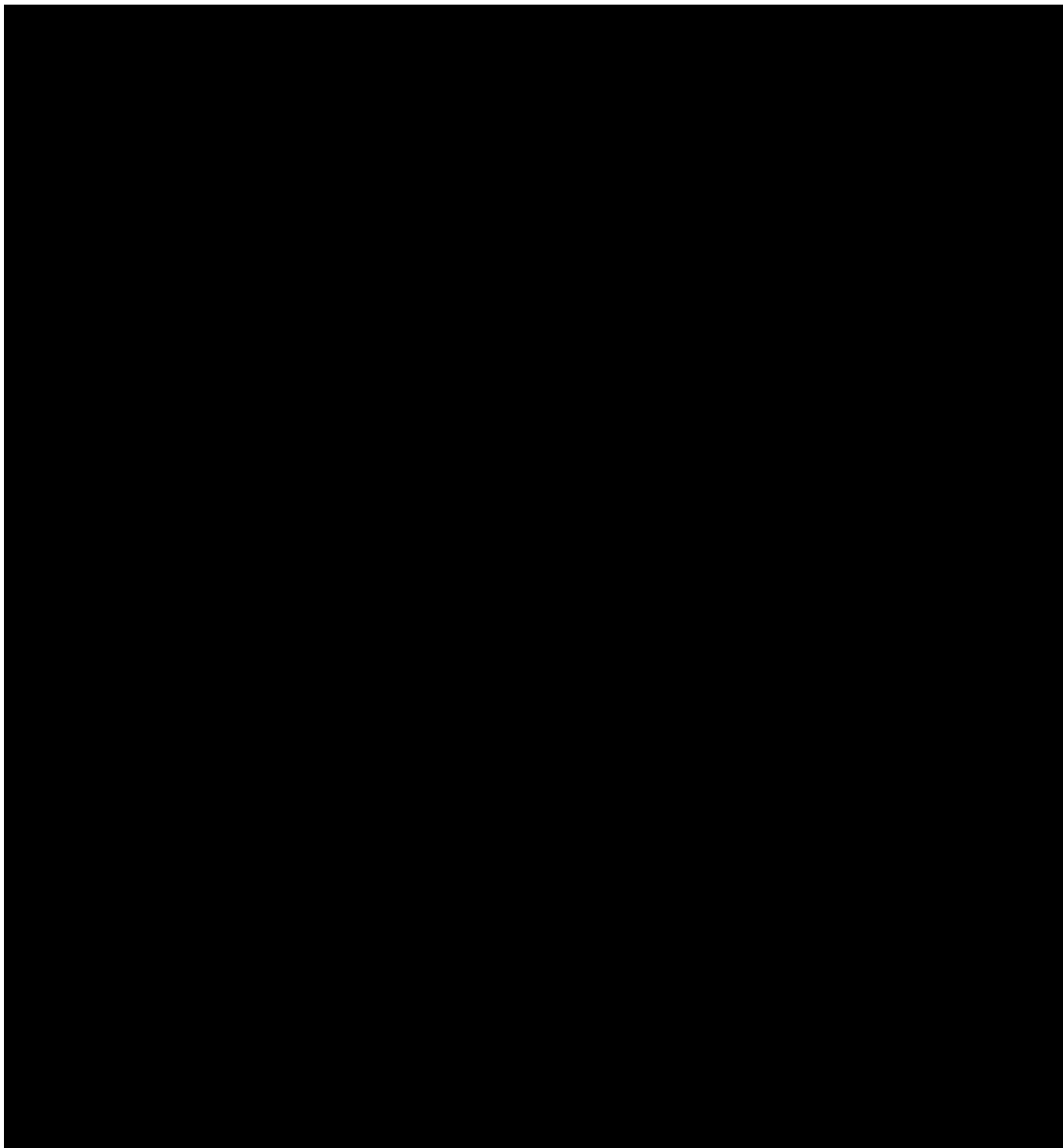
[REDACTED]

²⁸⁷ Arm Holdings plc Form 20-F for the fiscal year ended March 31, 2025, p. 29.
²⁸⁸ Schedule 5.

**QUALCOMM INCORPORATED AND QUALCOMM TECHNOLOGIES, INC.
V. ARM HOLDINGS PLC**



QUALCOMM INCORPORATED AND QUALCOMM TECHNOLOGIES, INC.
V. ARM HOLDINGS PLC



²⁹¹ Schedule 3.2.

²⁹² [REDACTED]. See Schedule 3.1.

QUALCOMM INCORPORATED AND QUALCOMM TECHNOLOGIES, INC.
v. ARM HOLDINGS PLC

F. Qualcomm's Damages Related to Arm's Alleged Intentional Interference and Negligent Interference with Prospective Economic Advantage²⁹³

118. I understand that Qualcomm claims intentional interference and negligent interference with prospective economic advantage against Arm as a result of a letter that Arm sent Qualcomm on October 22, 2024 (the "Notice Letter") and prior allegedly misleading communications by Arm to Qualcomm's customers.²⁹⁴ In the Notice Letter, Arm alleged that Qualcomm was in material breach of the Qualcomm ALA for the development and marketing of "unlicensed cores" and claimed that Arm would be entitled to terminate the Qualcomm ALA in 60 days if Qualcomm did not meet Arm's demands for a "cure" to its alleged breach.²⁹⁵ Qualcomm alleges that the Notice Letter was leaked to the media by Arm as an attempt to interfere with Qualcomm's current and potential business relationships and incite uncertainty about Qualcomm's ability to deliver Arm-compatible products.²⁹⁶

119. In addition to the Notice Letter, I understand that Arm had previous communications with Qualcomm's customers, including via letters sent to over [REDACTED] Qualcomm customers in August 2022 and early September 2022 and to [REDACTED] customers in May 2023, as well as via meetings with executives of Samsung, Qualcomm's largest customer in its mobile segment.²⁹⁷ In an October 4, 2022 meeting with Samsung executives, I understand that the

[REDACTED]

Second Amended Complaint, pp. 11-14, 42-43, 47-50, 56-59; Plaintiffs' Supplemental Responses and Objections to Defendant's First Set of Interrogatories (nos. 1-9), July 11, 2025, pp. 22-24, 30-31, 40.

²⁹⁵ Second Amended Complaint, pp. 11, 45-46.

²⁹⁶ Second Amended Complaint, pp. 47-48.

²⁹⁷ See, e.g., ARM_00110507; ARM_01215885; ARM_01231025; ARM_01215878; Deposition of Ziad Asghar, July 7, 2025, p. 118; Deposition of Rene Haas, July 7, 2025, pp. 22-25; Second Amended Complaint, pp. 42-43.

QUALCOMM INCORPORATED AND QUALCOMM TECHNOLOGIES, INC.
V. ARM HOLDINGS PLC

chairman of the Board of Arm indicated that Qualcomm's ALA with Arm would expire in 2025, even though I understand that the parties agree that the ALA does not expire in 2025.²⁹⁸

120. The letters that Arm sent in 2022 and 2023 to Qualcomm's customers alleged that Qualcomm breached the terms of its agreement with Arm, that certain unspecified Qualcomm products would not be covered under "[REDACTED]," and that [REDACTED]

[REDACTED] ."²⁹⁹

[REDACTED]

[REDACTED]

[REDACTED]

121. James Jeon, Vice President of Global Commercial Operations at Qualcomm,³⁰¹ testified that Qualcomm's immediate response team ("IRT") developed an approved statement to be sent to Qualcomm's customers in response to the Notice Letter.³⁰² In its statement, Qualcomm claimed that Arm's Notice Letter was "designed to strongarm a longtime partner" and "interfere with [Qualcomm's] performance-leading CPUs."³⁰³ Qualcomm further stated that Arm's Notice Letter "appear[ed] to be an attempt to disrupt the legal process, and its claim for termination is completely baseless."³⁰⁴

122. Mr. Jeon testified that certain customers made follow-up inquiries regarding the Notice Letter.³⁰⁵ Specifically, Mr. Jeon stated that some customers replied that "they understand the situation, they get [Qualcomm's] message, and then they don't follow up. But some of the

²⁹⁸ Trial Proceedings, *Arm v. Qualcomm*, C.A. No. 22-1146 (MN), Volume 2, December 16, 2024, pp. 145, 346.

²⁹⁹ See, e.g., ARM_00110511; ARM_01215886.

³⁰⁰ Deposition of Jonathan Weiser, July 11, 2025, pp. 45-49.

³⁰¹ Deposition of James Jeon, July 11, 2025, p. 23.

³⁰² Deposition of James Jeon, July 11, 2025, pp. 24-25.

³⁰³ See, e.g., QCVARM_1121337.

³⁰⁴ See, e.g., QCVARM_1121337.

³⁰⁵ Deposition of James Jeon, July 11, 2025, e.g., pp. 22, 45-46.

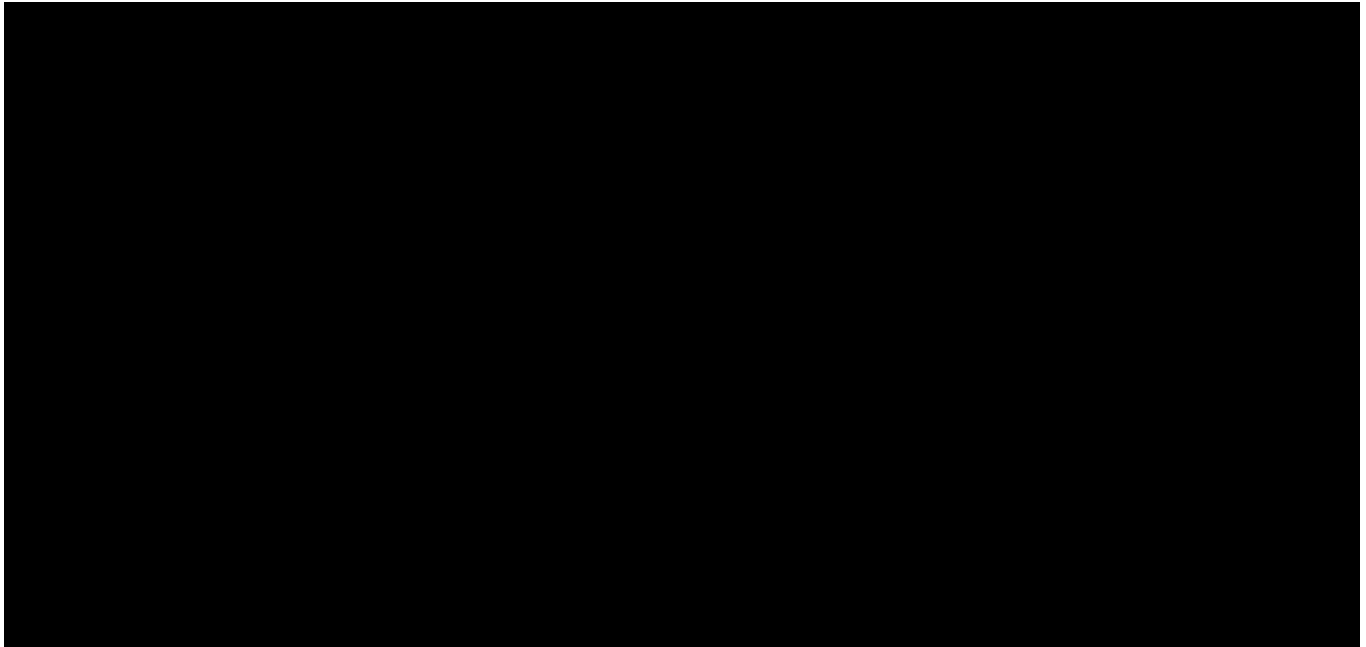
QUALCOMM INCORPORATED AND QUALCOMM TECHNOLOGIES, INC.
V. ARM HOLDINGS PLC

G. Conclusion

141. Based on the analyses described above, I calculate the [REDACTED]

[REDACTED]
[REDACTED] In addition, should the trier of fact determine that Arm's alleged wrongful conduct caused Qualcomm to overpay for [REDACTED], I quantify the amount of such overpayment. Finally, I calculate Qualcomm's loss associated with the [REDACTED], should the trier of fact determine that the change in terms was caused by Arm's alleged wrongful conduct. The figure below summarized the above-described calculations.

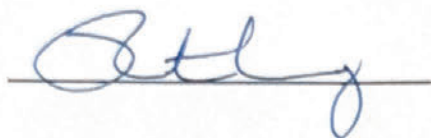
Figure 27: Summary of Qualcomm's Damages³⁶²



³⁶² Schedule 1.

QUALCOMM INCORPORATED AND QUALCOMM TECHNOLOGIES, INC.
V. ARM HOLDINGS PLC

I declare under penalty of perjury that the foregoing is true and correct.



Patrick F. Kennedy, Ph.D.

Managing Director

Stout Risius Ross, LLC

8/8/2025

Executed on

EXHIBIT A



Patrick F. Kennedy, PhD

Managing Director

Patrick F. Kennedy is a Managing Director at Stout based in San Diego, CA. Dr. Kennedy provides analysis, consultation, and expert opinions in business and dispute contexts. In his more than 20 years of experience, Dr. Kennedy has testified as an expert in Federal Court, the U.S. Court of Claims, Bankruptcy Court, State Court, and in private arbitrations throughout the country.

Dr. Kennedy has analyzed economic loss and damages in matters with causes of action including, but not limited to, patent, copyright, trademark and trade secret misappropriation, false advertising, breach of contract, product liability, fraud, professional malpractice, negligence, trespass, construction defect, antitrust and unfair competition, insurance bad faith, employment disputes and loss of earnings.

Dr. Kennedy has experience in a wide range of industries involving diverse technology.

PROFESSIONAL EXPERIENCE

2023 to present	Stout	Managing Director
2011 to 2023	Torrey Partners	Managing Director
2006 to 2011	LECG	Managing Director (2008)
1996 to 2006	Mack Barclay, Inc.	Shareholder (1998)
1995 to 1996	International Securities Group, Inc.	Director of Economic Research
1992 to 1995	Board of the Governors of the Federal Reserve System, Washington, D.C.	Economist

EDUCATION

Doctorate in Economics, Stanford University, 1992

Awarded Stanford University Fellowship, Bradley Foundation Dissertation Fellowship, and Outstanding Teaching Award

Bachelor of Arts in Economics, University of California, San Diego, 1986

Muir College Valedictorian, Summa Cum Laude and Phi Beta Kappa. Awarded UC Regents Scholarship and the Seymour E. Harris Economics Award

LICENSES AND PROFESSIONAL MEMBERSHIPS

Registered Securities Representative and Registered Principal
(NASD Series 7, 24 and 63 – inactive)

American Economic Association

National Association for Business Economics

National Association for Forensic Economics

Licensing Executive Society

BOARD MEMBERSHIPS

Torrey Pines Bank, Board of Directors

University of California San Diego, Economic Leadership Board Member

AWARDS AND PUBLICATIONS

IAM Patent 1000

SELECTED CASE AND INDUSTRY EXPERIENCE

INTELLECTUAL PROPERTY

- Patent infringement claims including cellular handset technologies, various integrated circuits, medical devices, action cameras, digital image sensors and processing, network and device security, software, social media, unmanned aerial vehicles, advertising, LED backlighting, vehicle equipment and testing, electronic lottery systems, antibacterial products, DNA-based diagnostic testing, radio frequency identification systems, apparel and other products
- Trade secret misappropriation claims including medical devices, responsive website design, drug development, network security, systems integration, merchant services, financial services, fiber-reinforced polymer systems, manufacturing, cellular handsets, Bluetooth devices and other products
- Trademark and copyright infringement claims including cloud storage, luxury watches, musical composition, a nationally branded convention, wireless headsets, food products, fashion accessories, field marketing organizations, ceiling fans, jewelry, toys, apparel, retail and other products

OTHER MATTERS

- Breach of contract, intentional interference with prospective economic advantage, professional malpractice, insurance bad faith and other claims in industries including, but not limited to, oil wells and extraction, pharmaceutical clinical trials, reference microorganisms and cell lines, aircraft rescue and firefighting vehicles, wineries, gaming and casinos, satellite television, water purification filters, defense contracting, aerospace, aircraft charter, medical services, government contracts, veterans counseling services, advertising, national franchises, printing, paper and plastics, multilevel marketing, agriculture, footwear, financial services, insurance brokerage and real estate development
- Qui Tam cases involving overbilling by major systems integrators, faulty illuminating flares used in military aviation, improper testing of semiconductors used in military applications, and faulty design of a spacecraft intended to return solar wind samples to earth
- Foodborne illness and product recall
- Natural disaster business losses, including the Northern and Southern California wildfires
- Eminent domain matters involving real estate development and construction aggregates
- Valuing liabilities associated with future product liability claims for an automobile manufacturer in bankruptcy court
- Valuing technology related to motor vehicle engine diagnostics, drone anti-collision sensor technology and other products and services
- Multidistrict product liability litigation including pharmaceutical products and asbestos
- Consumer and business class actions related to solar panels, a natural gas facility blowout, automotive products, assisted living facilities, mobile home park relocation and cellular services
- Antitrust damages in convention services, telecommunications, and aircraft
- Personal loss including aviation, maritime and under the Vaccine Injury Compensation Program

EXHIBIT B

Patrick F. Kennedy, Ph.D.
Deposition and Trial Testimony

Date	Case Name	Venue	Testimony
08/06/25	Contour IP Holdings v. GoPro	CA Northern - Federal Court	Deposition
07/08/25	Carmack v. American Boat Works, Inc. and American Marine Corporation	HI Federal Court	Deposition
06/18/25	Chester v. The Belt Railway Company of Chicago	IL Federal Court	Deposition
06/06/25	Ikhana Group LLC v. Viking Air Limited	Arbitration	Trial
05/15/25	Quiroz v. Caltrans	Tulare Superior Court	Trial
04/08/25	Quiroz v. Caltrans	Tulare Superior Court	Deposition
04/03/25	Valeo Schalter und Sensoren GmbH v. Nvidia Corporation	CA Northern - Federal Court	Deposition
04/01/25	Blink Health Group, LLC v. Susan Lang	American Arbitration Association	Deposition
03/17/25	Baker v. Secretary of Department of Health and Human Services	U.S. Court of Federal Claims	Hearing
12/17/24	Jubilant Draximage, Inc. v. Jubilant Radiopharmacies	CA Central - Federal Court	Deposition
12/13/24	Nasdaq, Inc. v. Miami International Holdings, Inc.	New Jersey - Federal Court	Deposition
12/03/24	Planner 5D v. Meta Platforms, Inc.	CA Northern - Federal Court	Deposition
11/12/24	Amyndas Pharmaceuticals, LLC v. Alexion Pharmaceuticals, Inc.	MA Federal Court	Deposition
11/06/24	Scientific Applications & Research Associates (SARA), Inc. v. Zipline International, Inc.	CA Northern - Federal Court	Deposition
10/25/24	Gardner Denver, Inc. v. Accurate Air Engineering, Inc.	CA Central - Federal Court	Deposition
10/04/24	Stiner, et al. v. Brookdale Senior Living Communities, Inc.	CA Northern - Federal Court	Deposition
10/03/24	Smartsky Networks, LLC v. GOGO Business Aviation, LLC	Delaware - Federal Court	Deposition
09/30/24	Alorica, Inc. v. Fortinet, Inc.	Santa Clara Superior Court	Trial
07/26/24	Shadow Holdings, LLC v. John Paul Mitchell Systems	American Arbitration Association	Arbitration
07/19/24	Shadow Holdings, LLC v. John Paul Mitchell Systems	American Arbitration Association	Arbitration
07/08/24	ARM Ltd v. Qualcomm, Inc.	Delaware - Federal Court	Deposition
06/25/24	Shadow Holdings, LLC v. John Paul Mitchell Systems	American Arbitration Association	Deposition
06/18/24	Risk v. United Airlines, Inc.	Los Angeles Superior Court	Deposition
04/17/24	Heredia, et al. v. Sunrise Senior Living, LLC	CA Central - Federal Court	Declaration
04/16/24	Pliner v. Central Iowa Health System, et al.	IA Federal Court	Deposition
04/12/24	Rex Computing, Inc. v. Cerebras Systems, Inc.	Delaware - Federal Court	Deposition
04/10/24	Saint Paul Commodities, Inc. v. Oleo-X LLC	NY American Arbitration Association	Arbitration
04/05/24	NantWorks, LLC v. Bank of America Corporation	CA Central - Federal Court	Deposition
03/01/24	Palm Beach Tan, Inc. v. Sunless, Inc.	OH Northern - Federal Court	Deposition
02/16/24	Cocke v. United States of America, et al.	GA Southern - Federal Court	Deposition
01/19/24	Saint Paul Commodities, Inc. v. Oleo-X LLC	NY American Arbitration Association	Deposition
12/14/23	Davis v. Secretary of Department of Health and Human Services	U.S. Court of Federal Claims	Hearing
11/15/23	Eilan v. Secretary of Department of Health and Human Services	U.S. Court of Federal Claims	Hearing
10/19/23	Stiner, et al. v. Brookdale Senior Living Communities, Inc.	CA Northern - Federal Court	Declaration
10/16/23	Jones v. Secretary of Department of Health and Human Services	U.S. Court of Federal Claims	Hearing
09/12/23	Pacific Steel Group v. Commerical Metals Company, et al.	CA Northern - Federal Court	Deposition
09/07/23	Bryan v. Secretary of Department of Health and Human Services	U.S. Court of Federal Claims	Hearing
09/05/23	Alorica, Inc. v. Fortinet, Inc.	Santa Clara Superior Court	Deposition
08/31/23	Alorica, Inc. v. Fortinet, Inc.	Santa Clara Superior Court	Deposition
08/22/23	Avila v. Joe Avis Farms	San Joaquin Superior Court	Trial
06/26/23	Bright v. Brookdale Senior Living Inc.; and Gunza v. Brookdale Senior Living Inc.	TN Middle - Federal Court	Deposition
06/01/23	Bright v. Brookdale Senior Living Inc.; and Gunza v. Brookdale Senior Living Inc.	TN Middle - Federal Court	Declaration
05/17/23	MicroVenton, Inc. v. Balt USA, Inc.	CA Central - Federal Court	Deposition
04/26/23	Taction Technology, Inc. v. Apple Inc.	CA Southern - Federal Court	Deposition
04/21/23	Philips North America LLC, et al. v. TEC Holdings, Inc.	NC Western - Federal Court	Trial
04/14/23	Philips North America LLC, et al. v. TEC Holdings, Inc.	NC Western - Federal Court	Trial
04/13/23	PennyMac Loan Services, LLC v. Black Knight Servicing Technologies, LLC	American Arbitration Association	Arbitration
03/09/23	Raymond James Financial, Inc, et al. v. Deutsche Bank AG, et al.	FINRA Dispute Resolution	Arbitration
03/02/23	Wisk Aero LLC v. Archer Aviation, Inc.	CA Northern - Federal Court	Deposition
02/22/23	Raymond James Financial, Inc, et al. v. Deutsche Bank AG, et al.	FINRA Dispute Resolution	Deposition
02/14/23	Crysel v. American Equity	Orange County Superior Court	Trial
01/19/23	DexCom, Inc. v. Abbott Diabetes Care, Inc.	Delaware - Federal Court	Deposition
12/29/22	Crysel v. American Equity	Orange County Superior Court	Deposition
12/27/22	PennyMac Loan Services, LLC v. Black Knight Servicing Technologies, LLC	American Arbitration Association	Deposition
10/19/22	Avila v. Joe Avis Farms	San Joaquin Superior Court	Deposition
09/22/22	Alcon Vision, LLC v. Lens.com, Inc.	NY Eastern - Federal Court	Deposition
08/17/22	Vitalyte Sports Nutrition, Inc. v. Revitalyte, LLC	TX Western - Federal Court	Deposition
08/11/22	Sunstone Information Defense, Inc. v. International Business Machines Corporation	TX Western - Federal Court	Trial
08/04/22	Rodriguez, et al. v. Sea Breeze Jet Ski, LLC	CA Northern - Federal Court	Deposition
07/28/22	Kurin, Inc. v. Magnolia Medical Technologies, Inc.	Delaware - Federal Court	Trial
05/18/22	Stiner, et al. v. Brookdale Senior Living Communities, Inc.	CA Northern - Federal Court	Declaration
05/11/22	CRF Frozen Foods v. Pictsweet, et al.	TN Middle - Federal Court	Deposition
05/04/22	Ayers v. The Penta Building Group	Riverside Cty Superior Court	Trial
03/25/22	The Waffle v. Tucker Investments	Los Angeles Superior Court	Trial

Patrick F. Kennedy, Ph.D.
Deposition and Trial Testimony

Date	Case Name	Venue	Testimony
02/17/22	Sunstone Information Defense, Inc. v. International Business Machines Corporation	TX Western - Federal Court	Deposition
01/27/22	Chan v. Kimball, Tirey & St. John	San Diego Superior Court	Deposition
01/17/22	MedImpact Healthcare Systems, Inc. v. IQVIA, Inc.	CA Southern - Federal Court	Deposition
01/14/22	Nelson v. United States of America, et al.	OR - Federal Court	Trial
01/05/22	DeLeon-Piedra v. Ocean Angel V	CA Northern - Federal Court	Deposition
12/14/21	Stiner, et al. v. Brookdale Senior Living Communities, Inc.	CA Northern - Federal Court	Deposition
12/01/21	Contour IP Holdings v. GoPro	CA Northern - Federal Court	Deposition
11/18/21	Bellin Memorial Hospital v. Kinsey & Kinsey, Inc.	WI Federal Court	Trial
11/15/21	The Waffle v. Tucker Investments	Los Angeles Superior Court	Deposition
10/21/21	7510 Hazard, LLC v. Connecticut General Life Insurance Company	San Diego Superior Court	Deposition
10/18/21	Philips North America LLC, et al. v. Dorow	NC Federal Court	Deposition
10/18/21	Philips North America LLC, et al. v. Zimmerman, et al.	NC Federal Court	Deposition
10/12/21	MicroVention, Inc. v. Balt USA, Inc.	CA Central - Federal Court	Deposition
10/08/21	In re: PFA Insurance Marketing	CA Northern - Federal Court	Declaration
09/28/21	Cuker v. Pillsbury	CA Southern - Federal Court	Deposition
09/23/21	LISCR, LLC v. Legality Holdings, S.A.	VA Eastern - Federal Court	Deposition
09/17/21	TRC Operating Company, Inc. v. Chevron U.S.A., Inc.	Kern Cty Superior Court	Trial
09/08/21	Philips North America LLC, et al. v. TEC Holdings, Inc.	GA Northern - Federal Court	Deposition
09/02/21	7510 Hazard, LLC v. Connecticut General Life Insurance Company	San Diego Superior Court	Deposition
08/26/21	TRC Operating Company, Inc. v. Chevron U.S.A., Inc.	Kern Cty Superior Court	Trial
08/18/21	Stiner, et al. v. Brookdale Senior Living Communities, Inc.	CA Northern - Federal Court	Declaration
08/06/21	Kiva Health Brands, LLC v. Kiva Brands, Inc. et al.	CA Northern - Federal Court	Deposition

EXHIBIT C

**Qualcomm Incorporated and Qualcomm Technologies, Inc. v. Arm Holdings plc
Documents Considered List**

Exhibit C

Date	Description
Legal	
08/31/22	Complaint, Arm Ltd. v. Qualcomm Inc., Qualcomm Technologies, Inc. and Nuvia, Inc., Civil Action No. 1:22-cv-01146-MN
09/30/22	Defendants' Answer and Defenses to Plaintiff's Complaint and Jury Demand and Defendants' Counterclaim
10/26/22	Defendants' Answer and Defenses to Plaintiff's Complaint and Jury Demand and Defendants' Amended Counterclaim
04/18/24	Complaint, Qualcomm Incorporated, Qualcomm Technologies, Inc., v. Arm Holdings Plc., Civil Action No. 24-490-MN
12/16/24	First Amended Complaint and Exhibits
12/16/24	Trial Proceedings, Arm v. Qualcomm, C.A. No. 22-1146 (MN), Volume 2
01/21/25	Qualcomm's First Set of Requests for Production (Nos. 1–52)
02/07/25	Plaintiffs' Disclosures To Arm Holdings PLC. Pursuant to Delaware Default Standard Paragraph 3
02/07/25	Defendant Arm Holdings Plc.'s Initial Disclosures Pursuant to Paragraph 3 of the Default Standard for Discovery
02/07/25	Defendant Arm Holdings Plc.'s Rule 26(a)(1) Initial Disclosures
02/07/25	Plaintiffs' Initial Disclosures Pursuant To Rule 26(a)(1) of the Federal Rules of Civil Procedure
02/07/25	Arm Holdings Plc's First Set of Requests for Production to Plaintiffs Qualcomm Inc. and Qualcomm Technologies, Inc. (Nos. 1–58)
02/07/25	Arm Holdings Plc's First Set of Interrogatories to Plaintiffs Qualcomm Inc. and Qualcomm Technologies, Inc. (Nos. 1–9)
02/20/25	Arm Ltd.'s Objections and Responses to Qualcomm's First Set of Requests for Production (Nos. 1–52)
02/21/25	Qualcomm's Second Set of Requests for Production (Nos. 53–120)
02/21/25	Qualcomm's First Set of Interrogatories To Arm (Nos. 1–3)
03/10/25	Plaintiffs' Responses and Objections to Defendant's First Set of Requests for Production (Nos. 1–58)
03/10/25	Plaintiffs' Responses and Objections to Defendant's First Set of Interrogatories (Nos. 1–9)
03/14/25	Arm Holdings Plc's Second Set of Requests for Production to Plaintiffs Qualcomm Inc. and Qualcomm Technologies, Inc. (Nos. 59–122)
03/24/25	Arm Holdings Plc's Objections and Responses to Qualcomm's Second Set of Requests for Production (Nos. 53–120)
03/24/25	Arm Holdings Plc's Objections and Responses to Qualcomm's First Set of Interrogatories (Nos. 1–3)
03/27/25	Plaintiffs' Motion for Leave To Amend the Complaint
04/02/25	Qualcomm's Third Set of Requests for Production (Nos. 121–156)
04/04/25	Defendant Arm Holdings Plc.'s Rule 26(a)(1) First Supplemental Initial Disclosures
04/10/25	Qualcomm's Amended Interrogatory No. 3 To Arm
04/14/25	Plaintiffs' Responses and Objections to Defendant's Second Set of Requests for Production (Nos. 59–122)
04/16/25	Qualcomm's Fourth Set of Requests for Production (Nos. 157–168)
05/01/25	Plaintiffs' Responses and Objections to Defendant's Third Set of Requests for Production (Nos. 123–173)
05/09/25	Qualcomm's Fifth Set of Requests for Production (Nos. 169–186)
05/09/25	Plaintiffs' Responses and Objections to Defendant's Second Set of Interrogatories (Nos. 10–13)
05/12/25	Arm Holdings Plc's Objections and Responses to Qualcomm's Amended Interrogatory No. 3
05/14/25	Qualcomm's Second Set of Interrogatories To Arm (Nos. 4–11)
05/16/25	Arm Holdings Plc's Objections and Responses to Qualcomm's Fourth Set of Requests for Production (Nos. 157–168)
05/22/25	Qualcomm's Sixth Set of Requests for Production (Nos. 187–191)
06/03/25	Second Amended Complaint and Exhibits
06/09/25	Qualcomm's Seventh Set of Requests for Production (Nos. 192–195)
06/09/25	Arm Holdings Plc's Objections and Responses to Qualcomm's Fifth Set of Requests for Production (Nos. 169–186)
06/09/25	Qualcomm's Third Set of Interrogatories To Arm (No. 12)
06/11/25	Arm's Fifth Set of Requests for Production to Qualcomm (Nos. 228–287)
06/11/25	Arm's Third Set of Interrogatories to Qualcomm (Nos. 14–23)
06/11/25	Arm's First Set of Requests for Admission to Qualcomm (Nos. 1–30)
06/11/25	Plaintiffs' First Requests for Admissions to Defendant (Nos. 1–28)
06/12/25	Arm's Rule 26(a)(1) Second Supplemental Initial Disclosures
06/13/25	Plaintiffs' Supplemental Disclosures To Arm Holdings PLC. Pursuant to Delaware Default Standard Paragraph 3
06/13/25	Plaintiffs' Supplemental Initial Disclosures Pursuant To Rule 26(a)(1) of the Federal Rules of Civil Procedure
06/16/25	Arm's Rule 26(a)(1) Third Supplemental Initial Disclosures
06/16/25	Arm's Objections and Responses to Qualcomm's Second Set of Interrogatories (Nos. 4–11)
06/17/25	Arm Ltd.'s First Supplemental Objections and Responses to Qualcomm's First Set of Requests for Production (Nos. 1–52)
06/17/25	Arm Ltd.'s First Supplemental Objections and Responses to Qualcomm's Second Set of Requests for Production (Nos. 53–120)
06/17/25	Arm Holdings Plc's First Supplemental Objections and Responses to Qualcomm's Third Set of Requests for Production (Nos. 121–156)
06/18/25	Arm's First Supplemental Response to Qualcomm's Amended Interrogatory No. 3
06/24/25	Arm Holdings Plc's Objections and Responses to Qualcomm's Sixth Set of Requests for Production (Nos. 187–191)
06/25/25	Plaintiffs' First Supplemental Responses and Objections to Defendant's First Set of Interrogatories (Nos. 1–4, 7, and 9)
07/09/25	Arm Holdings Plc's Objections and Responses to Qualcomm's Seventh Set of Requests for Production (Nos. 192–195)
07/09/25	Plaintiffs' Responses and Objections to Defendant's Fourth Set of Requests for Production (Nos. 174–227)
07/09/25	Arm's Objections and Responses to Qualcomm's Third Set of Interrogatories (No. 12)
07/11/25	Plaintiffs' Responses and Objections to Defendant's Fifth Set of Requests for Production (Nos. 228–287)
07/11/25	Arm's First Supplemental Response to Qualcomm's Amended Interrogatory No. 3
07/11/25	Arm's First Supplemental Response to Qualcomm's Third Set of Interrogatories (No. 12)
07/11/25	Arm's First Supplemental Objections and Responses to Qualcomm's Second Set of Interrogatories (Nos. 4–11)
07/11/25	Arm Holdings Plc's First Supplemental Objections and Responses to Qualcomm's First Set of Interrogatories (Nos. 1–3)
07/11/25	Plaintiffs' Responses and Objections to Defendant's Third Set of Interrogatories (Nos. 14–24)
07/11/25	Plaintiffs' Supplemental Responses and Objections to Defendant's Second Set of Interrogatories (Nos. 10–13)
07/11/25	Plaintiffs' Supplemental Responses and Objections to Defendant's First Set of Interrogatories (Nos. 1–9)
08/01/25	Plaintiffs' Motion for Leave to Amend the Complaint to Name Arm Holdings Plc. And Arm Ltd. as Individual Defendants

**Qualcomm Incorporated and Qualcomm Technologies, Inc. v. Arm Holdings plc
Documents Considered List**

Exhibit C

Date	Description
Depositions	
06/17/25	Deposition of Sudeep Holla and Exhibits
06/17/25	Deposition of Phil Hughes and Exhibits
06/18/25	Deposition of Karl Whealton and Exhibits
06/20/25	30(b)(6) Deposition of Karthik Shivashankar and Exhibits
06/20/25	Deposition of Martin Weidmann and Exhibits
06/24/25	Deposition of Manju Varma and Exhibits
06/25/25	Deposition of Kurt Wolf and Exhibits
06/25/25	Deposition of Gerard Williams and Exhibits
06/26/25	Deposition of Will Abbey and Exhibits
06/26/25	Deposition of Ehab Youssef and Exhibits
06/27/25	Deposition of Richard Meacham and Exhibits
06/27/25	Deposition of Mark Dragicevich and Exhibits
06/27/25	Deposition of Michael Williams and Exhibits
06/30/25	Deposition of Spencer Collins and Exhibits
07/01/25	Deposition of Andrew Howard and Exhibits
07/01/25	Deposition of Jean-Francois Vidon and Exhibits
07/01/25	30(b)(6) Deposition of Pavankumar Mulabagal and Exhibits
07/02/25	Deposition of Richard Grisenthwaite and Exhibits
07/02/25	Deposition of Paul Williamson and Exhibits
07/02/25	Deposition of Christopher Patrick and Exhibits
07/03/25	30(b)(6) Deposition of Cristiano Amon and Exhibits
07/03/25	Deposition of Jeffrey Golden and Exhibits
07/03/25	Deposition of Lynn Couillard and Exhibits
07/04/25	Deposition of Kenneth Siegel and Exhibits
07/04/25	Deposition of Peter Greenhalgh and Exhibits
07/07/25	Deposition of Aparajita Bhattacharya and Exhibits
07/07/25	Deposition of Rene Haas and Exhibits
07/07/25	Deposition of Ziad Asghar and Exhibits
07/08/25	Deposition of Laura Sand and Exhibits
07/08/25	Deposition of John Horley and Exhibits
07/09/25	Deposition of Jignesh Trivedi and Exhibits
07/09/25	30(b)(6) Deposition of Jeffrey Fonseca and Exhibits
07/10/25	Deposition of Durga Malladi and Exhibits
07/10/25	Deposition of Akshay Bhatnagar and Exhibits
07/10/25	30(b)(6) Deposition of Jannik Nelson and Exhibits
07/10/25	30(b)(6) Deposition of Christine Tran and Exhibits
07/11/25	Deposition of James Jeon and Exhibits
07/11/25	Deposition of Vivek Agrawal and Exhibits
07/11/25	Deposition of Jonathan Weiser and Exhibits
07/11/25	Deposition of Larissa Cochran and Exhibits
07/11/25	Deposition of Ann Chaplin and Exhibits
07/29/25	Deposition of Mohamed Awad and Exhibits
	Principal Engineer at Arm
	Corporate Vice President and Chief Communications Officer at Advanced Micro Devices, Inc.
	Senior Director of CPU, DSP, Benchmarking, and AI H/W Product Management at Qualcomm
	Senior Director of Commercial Strategy and Licensing at Arm
	Director of Product Management at Arm
	Senior Director of CPU Product Management at Qualcomm
	Director of Sourcing at Qualcomm
	Senior Director of Engineering at Qualcomm
	Executive Vice President and Chief Commercial Officer at Arm
	Vice President and Deputy General Counsel of Licensing, Legal Ops, and Trade Compliance at Arm
	Principal Engineer Automotive CPU at Qualcomm
	Senior Director of Finance at Qualcomm
	Lead Architect for Debug and RAS Architecture at Arm
	Executive Vice President and Chief Legal Officer at Arm
	Vice President of Partner Success and Licensing at Arm
	Senior Director of Engineering at Qualcomm
	Senior Director of Sales and Business Development at Qualcomm
	Chief Architect and Fellow at Arm
	Senior Vice President and General Manager of IoT at Arm
	Senior Vice President and General Manager of Mobile and Wearables at Qualcomm
	President and CEO of Qualcomm at Qualcomm
	Hardware Engineer at Qualcomm
	Vice President of Strategic Alliances at Arm
	Managing Partner at Morrison & Foerster
	Senior Vice President of Technology at Arm
	Senior Director of Engineering at Arm
	CEO at Arm
	Senior Vice President and General Manager of XR & Spatial Computing at Qualcomm
	Senior Vice President, Legal Counsel at Qualcomm
	Distinguished Engineer at Arm
	Director of Engineering at Qualcomm
	Director of Sales at Arm
	Senior Vice President and General Manager of Technology Planning and Solutions and Data Center at Qualcomm
	Senior Manager of North America Licensing at Arm
	VP of Revenue at Arm
	Senior Director of Legal at Arm
	VP of Global Commercial Operations at Qualcomm
	Senior Principal Engineer at Arm
	Former Lead Attorney for QCT at Qualcomm
	Senior Director of Contracts at Qualcomm
	General Counsel and Corporate Secretary at Qualcomm
	Senior Vice President and General Manager of Infrastructure Business

Qualcomm Incorporated and Qualcomm Technologies, Inc. v. Arm Holdings plc
Documents Considered List

Exhibit C

Date	Description		
Produced Documents			
*If the bates number referenced below is the beginning of a document/production, the bates reference is to the entire document.			
*I had access to documents produced by Qualcomm, Arm, and other third parties.			
ARM_0000680	QCVARM_0468074	QCVARM_0618338	QCVARM_1088375
ARM_00009370	QCVARM_0468076	QCVARM_0618354	QCVARM_1117815
ARM_00025401	QCVARM_0468082	QCVARM_0618387	QCVARM_1117818
ARM_00052643	QCVARM_0468164	QCVARM_0618420	QCVARM_1117821
ARM_00055357	QCVARM_0468212	QCVARM_0618448	QCVARM_1117825
ARM_00056571	QCVARM_0468426	QCVARM_0618449	QCVARM_1117836
ARM_00062441	QCVARM_0468623	QCVARM_0618450	QCVARM_1117839
ARM_00062474	QCVARM_0520880	QCVARM_0618454	QCVARM_1117843
ARM_00076910	QCVARM_0523656	QCVARM_0618455	QCVARM_1117847
ARM_00083490	QCVARM_0523730	QCVARM_0618456	QCVARM_1117851
ARM_00083492	QCVARM_0523754	QCVARM_0618459	QCVARM_1117866
ARM_00083608	QCVARM_0523826	QCVARM_0618461	QCVARM_1117873
ARM_00086164	QCVARM_0523837	QCVARM_0618568	QCVARM_1117877
ARM_00103702	QCVARM_0523995	QCVARM_0618694	QCVARM_1117880
ARM_00103718	QCVARM_0524007	QCVARM_0618702	QCVARM_1117884
ARM_00103781	QCVARM_0524237	QCVARM_0618703	QCVARM_1117891
ARM_00110507	QCVARM_0524718	QCVARM_0618705	QCVARM_1117898
ARM_00110509	QCVARM_0524739	QCVARM_0618707	QCVARM_1117901
ARM_00110511	QCVARM_0524900	QCVARM_0618708	QCVARM_1117905
ARM_00110513	QCVARM_0525167	QCVARM_0618712	QCVARM_1117909
ARM_00110515	QCVARM_0525344	QCVARM_0618843	QCVARM_1117934
ARM_00110517	QCVARM_0525354	QCVARM_0618975	QCVARM_1117938
ARM_00114880	QCVARM_0526038	QCVARM_0624133	QCVARM_1117942
ARM_00118835	QCVARM_0526286	QCVARM_0626519	QCVARM_1117948
ARM_00119119	QCVARM_0526828	QCVARM_0626590	QCVARM_1117956
ARM_01014940	QCVARM_0527427	QCVARM_0626603	QCVARM_1117960
ARM_01215878	QCVARM_0527470	QCVARM_0667395	QCVARM_1117971
ARM_01215885	QCVARM_0527544	QCVARM_0685578	QCVARM_1117977
ARM_01215886	QCVARM_0527546	QCVARM_0687237	QCVARM_1117981
ARM_01215887	QCVARM_0527863	QCVARM_0687476	QCVARM_1117985
ARM_01215888	QCVARM_0528119	QCVARM_0687479	QCVARM_1117989
ARM_01215889	QCVARM_0528956	QCVARM_0687758	QCVARM_1118003
ARM_01215890	QCVARM_0528981	QCVARM_0687760	QCVARM_1118009
ARM_01216189	QCVARM_0529021	QCVARM_0688778	QCVARM_1118012
ARM_01230076	QCVARM_0529438	QCVARM_0688834	QCVARM_1118016
ARM_01231025	QCVARM_0529703	QCVARM_0688922	QCVARM_1118020
ARM_01231027	QCVARM_0529842	QCVARM_0688932	QCVARM_1118024
ARM_01231028	QCVARM_0530133	QCVARM_0689117	QCVARM_1118029
ARM_01231029	QCVARM_0530245	QCVARM_0691526	QCVARM_1118036
ARM_01231030	QCVARM_0530447	QCVARM_0691853	QCVARM_1118040
ARM_01231031	QCVARM_0531270	QCVARM_0692586	QCVARM_1118043
ARM_01231032	QCVARM_0531350	QCVARM_0692665	QCVARM_1118051
ARM_01231033	QCVARM_0531368	QCVARM_0692718	QCVARM_1118055
ARM_01231034	QCVARM_0531514	QCVARM_0699176	QCVARM_1118059
ARM_01231037	QCVARM_0531658	QCVARM_0699278	QCVARM_1118064
ARM_01231038	QCVARM_0531817	QCVARM_0707732	QCVARM_1118067
ARM_01231039	QCVARM_0531821	QCVARM_0707997	QCVARM_1118081
ARM_01231040	QCVARM_0531864	QCVARM_0708086	QCVARM_1118085
ARM_01231041	QCVARM_0531919	QCVARM_0708107	QCVARM_1118089
ARM_01231042	QCVARM_0532274	QCVARM_0708118	QCVARM_1118093
ARM_01231043	QCVARM_0532413	QCVARM_0709978	QCVARM_1118097
ARM_01231044	QCVARM_0532997	QCVARM_0710047	QCVARM_1118100
ARM_01231045	QCVARM_0535154	QCVARM_0710418	QCVARM_1118104
ARM_01231046	QCVARM_0535481	QCVARM_0711109	QCVARM_1118146
ARM_01231047	QCVARM_0535654	QCVARM_0711110	QCVARM_1118481
ARM_01231048	QCVARM_0535721	QCVARM_0713477	QCVARM_1118510
ARM_01231049	QCVARM_0539180	QCVARM_0713488	QCVARM_1118515
ARM_01231050	QCVARM_0539482	QCVARM_0713513	QCVARM_1118518
ARM_01231051	QCVARM_0571705	QCVARM_0713516	QCVARM_1118524
ARM_01231052	QCVARM_0572833	QCVARM_0713527	QCVARM_1118528
ARM_01231053	QCVARM_0572851	QCVARM_0713528	QCVARM_1118531
ARM_01231054	QCVARM_0572936	QCVARM_0713530	QCVARM_1118534
ARM_01231055	QCVARM_0573056	QCVARM_0713532	QCVARM_1118538
ARM_01231056	QCVARM_0573528	QCVARM_0713535	QCVARM_1118543
ARM_01231057	QCVARM_0573677	QCVARM_0713538	QCVARM_1118546
ARM_01231058	QCVARM_0573684	QCVARM_0713652	QCVARM_1118549
ARM_01231059	QCVARM_0573685	QCVARM_0713665	QCVARM_1118552
ARM_01231060	QCVARM_0575290	QCVARM_0713840	QCVARM_1118555
ARM_01231061	QCVARM_0575607	QCVARM_0717757	QCVARM_1118559
ARM_01231062	QCVARM_0575611	QCVARM_0846761	QCVARM_1118565
ARM_01231063	QCVARM_0575613	QCVARM_0847668	QCVARM_1118596
ARM_01231064	QCVARM_0575615	QCVARM_0847765	QCVARM_1118779
ARM_01231394	QCVARM_0575616	QCVARM_0848924	QCVARM_1118787
ARM_01233086	QCVARM_0575617	QCVARM_0850838	QCVARM_1118795
ARM_01233089	QCVARM_0575634	QCVARM_0850937	QCVARM_1118800
ARM_01238384	QCVARM_0575636	QCVARM_0851120	QCVARM_1118820

Qualcomm Incorporated and Qualcomm Technologies, Inc. v. Arm Holdings plc
Documents Considered List

Exhibit C

Date	Description			
ARM_01241379	QCVARM	0577544	QCVARM	0851183
ARM_01241472	QCVARM	0578265	QCVARM	0851271
ARM_01241581	QCVARM	0579532	QCVARM	0851410
ARM_01241585	QCVARM	0580173	QCVARM	0851512
ARM_01241587	QCVARM	0580181	QCVARM	0851782
ARM_01249519	QCVARM	0595522	QCVARM	0851837
ARM_01291148	QCVARM	0595815	QCVARM	0854985
ARM_01314327	QCVARM	0599620	QCVARM	0855117
ARMQC_00001136	QCVARM	0599801	QCVARM	0855455
ARMQC_00027166	QCVARM	0600037	QCVARM	0855474
ARMQC_02600059	QCVARM	0600038	QCVARM	0855614
ARMQC_02600803	QCVARM	0600039	QCVARM	0856340
ARMQC_02600838	QCVARM	0600040	QCVARM	0856754
ARMQC_02601067	QCVARM	0600041	QCVARM	0856864
ARMQC_02720799	QCVARM	0600042	QCVARM	0863300
ARMQC_02727610	QCVARM	0600043	QCVARM	0863428
ARMQC_02730917	QCVARM	0600044	QCVARM	0863435
ARMQC_02731051	QCVARM	0600045	QCVARM	0863641
ARMQC_02731250	QCVARM	0600046	QCVARM	0863644
ARMQC_02731284	QCVARM	0600047	QCVARM	0863818
ARMQC_02732393	QCVARM	0600048	QCVARM	0864030
ARMQC_02741466	QCVARM	0600049	QCVARM	0864277
ARMQC_02742804	QCVARM	0600050	QCVARM	0864713
ARMQC_02742861	QCVARM	0600051	QCVARM	0864833
ARMQC_02747567	QCVARM	0600052	QCVARM	0864834
ARMQC_02747848	QCVARM	0600053	QCVARM	0864838
ARMQC_02749702	QCVARM	0600054	QCVARM	0864839
ARMQC_02750967	QCVARM	0600055	QCVARM	0864901
ARMQC_02750999	QCVARM	0600056	QCVARM	0864924
ARMQC_02771350	QCVARM	0600057	QCVARM	0864967
ARMQC_02772241	QCVARM	0600058	QCVARM	0864969
ARMQC_02772246	QCVARM	0600059	QCVARM	0865022
ARMQC_02772333	QCVARM	0600060	QCVARM	0865025
ARMQC_02774738	QCVARM	0600061	QCVARM	0865233
ARMQC_02774748	QCVARM	0600062	QCVARM	0865343
ARMQC_02774757	QCVARM	0600063	QCVARM	0865344
ARMQC_02774767	QCVARM	0600064	QCVARM	0865345
ARMQC_02774814	QCVARM	0600065	QCVARM	0865360
ARMQC_02774816	QCVARM	0600066	QCVARM	0865367
ARMQC_02774818	QCVARM	0600067	QCVARM	0865370
ARMQC_02774844	QCVARM	0600068	QCVARM	0865412
ARMQC_02775090	QCVARM	0600069	QCVARM	0865415
ARMQC_02779269	QCVARM	0600070	QCVARM	0865435
ARMQC_02779314	QCVARM	0600071	QCVARM	0865479
ARMQC_02779364	QCVARM	0600072	QCVARM	0865488
ARMQC_02779391	QCVARM	0600073	QCVARM	0865490
ARMQC_02779412	QCVARM	0600074	QCVARM	0865603
ARMQC_02779433	QCVARM	0600075	QCVARM	0866177
ARMQC_02779483	QCVARM	0600076	QCVARM	0867422
ARMQC_02783512	QCVARM	0600077	QCVARM	1014030
ARMQC_02783533	QCVARM	0600078	QCVARM	1014186
ARMQC_02783575	QCVARM	0600079	QCVARM	1014307
ARMQC_02783595	QCVARM	0600080	QCVARM	1014424
ARMQC_02783597	QCVARM	0600081	QCVARM	1014890
ARMQC_02783599	QCVARM	0600082	QCVARM	1014892
ARMQC_02783601	QCVARM	0600083	QCVARM	1014955
ARMQC_02783603	QCVARM	0600084	QCVARM	1015219
ARMQC_02783615	QCVARM	0600085	QCVARM	1015426
ARMQC_02783618	QCVARM	0600086	QCVARM	1015438
ARMQC_02783619	QCVARM	0600087	QCVARM	1015821
ARMQC_02783731	QCVARM	0600088	QCVARM	1016051
ARMQC_02783848	QCVARM	0600089	QCVARM	1016205
ARMQC_02783967	QCVARM	0600090	QCVARM	1016218
ARMQC_02784120	QCVARM	0600091	QCVARM	1017127
ARMQC_02784199	QCVARM	0600092	QCVARM	1017149
ARMQC_02784204	QCVARM	0600093	QCVARM	1017169
QC ARM EC 0000128	QCVARM	0600094	QCVARM	1017295
QC ARM EC 0001144	QCVARM	0600095	QCVARM	1017417
QCARM 0016229	QCVARM	0600096	QCVARM	1017438
QCARM 0027985	QCVARM	0600097	QCVARM	1017467
QCARM 0169753	QCVARM	0600098	QCVARM	1017747
QCARM 0169823	QCVARM	0600101	QCVARM	1019256
QCARM 0208733	QCVARM	0600533	QCVARM	1020165
QCARM 0218409	QCVARM	0600801	QCVARM	1022267
QCARM 0314128	QCVARM	0601671	QCVARM	1022268
			QCVARM	1118832
			QCVARM	1118836
			QCVARM	1118842
			QCVARM	1118844
			QCVARM	1118862
			QCVARM	1118865
			QCVARM	1118870
			QCVARM	1118884
			QCVARM	1118890
			QCVARM	1118894
			QCVARM	1118896
			QCVARM	1118898
			QCVARM	1118901
			QCVARM	1118926
			QCVARM	1118928
			QCVARM	1118929
			QCVARM	1118931
			QCVARM	1118933
			QCVARM	1118934
			QCVARM	1118945
			QCVARM	1118972
			QCVARM	1118976
			QCVARM	1118978
			QCVARM	1118980
			QCVARM	1118983
			QCVARM	1118986
			QCVARM	1118988
			QCVARM	1118990
			QCVARM	1118995
			QCVARM	1118997
			QCVARM	1118998
			QCVARM	1118999
			QCVARM	1119004
			QCVARM	1119005
			QCVARM	1119008
			QCVARM	1119015
			QCVARM	1119018
			QCVARM	1119020
			QCVARM	1119023
			QCVARM	1119025
			QCVARM	1119027
			QCVARM	1119030
			QCVARM	1119032
			QCVARM	1119070
			QCVARM	1119074
			QCVARM	1119120
			QCVARM	1120024
			QCVARM	1120466
			QCVARM	1120773
			QCVARM	1120811
			QCVARM	1120812
			QCVARM	1120999
			QCVARM	1121028
			QCVARM	1121029
			QCVARM	1121312
			QCVARM	1121313
			QCVARM	1121314
			QCVARM	1121315
			QCVARM	1121316
			QCVARM	1121317
			QCVARM	1121318
			QCVARM	1121319
			QCVARM	1121320
			QCVARM	1121321
			QCVARM	1121322
			QCVARM	1121323
			QCVARM	1121324
			QCVARM	1121325
			QCVARM	1121326
			QCVARM	1121327
			QCVARM	1121328
			QCVARM	1121329
			QCVARM	1121330
			QCVARM	1121331
			QCVARM	1121332
			QCVARM	1121333

Qualcomm Incorporated and Qualcomm Technologies, Inc. v. Arm Holdings plc
Documents Considered List

Exhibit C

Date	Description			
QCARM 0333656	QCARM 0601718	QCARM 1022565	QCARM 1121333	
QCARM 0337857	QCARM 0601787	QCARM 1023593	QCARM 1121334	
QCARM 0338243	QCARM 0602168	QCARM 1024002	QCARM 1121335	
QCARM 0338573	QCARM 0602198	QCARM 1024617	QCARM 1121336	
QCARM 0339100	QCARM 0602317	QCARM 1024852	QCARM 1121337	
QCARM 0343120	QCARM 0602395	QCARM 1024873	QCARM 1121338	
QCARM 0343533	QCARM 0602404	QCARM 1024874	QCARM 1121341	
QCARM 0343954	QCARM 0602434	QCARM 1026209	QCARM 1121342	
QCARM 0345914	QCARM 0604150	QCARM 1028558	QCARM 1121344	
QCARM 0350039	QCARM 0604257	QCARM 1028750	QCARM 1121346	
QCARM 0360161	QCARM 0605568	QCARM 1029604	QCARM 1121348	
QCARM 0362108	QCARM 0605660	QCARM 1029757	QCARM 1121351	
QCARM 0483799	QCARM 0605661	QCARM 1029911	QCARM 1121354	
QCARM 0569125	QCARM 0605876	QCARM 1030509	QCARM 1121359	
QCARM 0573247	QCARM 0606806	QCARM 1030813	QCARM 1121362	
QCARM 0579579	QCARM 0607060	QCARM 1031251	QCARM 1121491	
QCARM 2412907	QCARM 0607506	QCARM 1031267	QCARM 1121493	
QCARM 2416747	QCARM 0607680	QCARM 1033335	QCARM 1121510	
QCARM 2423696	QCARM 0607691	QCARM 1034376	QCARM 1121514	
QCARM 2533808	QCARM 0608131	QCARM 1037652	QCARM 1121518	
QCARM 3004833	QCARM 0608423	QCARM 1055990	QCARM 1121519	
QCARM 3449986	QCARM 0608452	QCARM 1056140	QCARM 1121522	
QCARM 3473070	QCARM 0608501	QCARM 1056567	QCARM 1121528	
QCARM 3485264	QCARM 0608626	QCARM 1057229	QCARM 1121529	
QCARM 3489547	QCARM 0608764	QCARM 1066278	QCARM 1121531	
QCARM 3496803	QCARM 0609540	QCARM 1066761	QCARM 1121536	
QCARM 3509490	QCARM 0609541	QCARM 1067283	QCARM 1121538	
QCARM 3509521	QCARM 0609543	QCARM 1067284	QCARM 1121541	
QCARM 3961513	QCARM 0609881	QCARM 1067971	QCARM 1121674	
QCARM 7463823	QCARM 0613037	QCARM 1068133	QCARM 1121930	
QCARM 7464139	QCARM 0615918	QCARM 1068141	QCARM 1121931	
QCARM 7464653	QCARM 0616170	QCARM 1068152	QCARM 1121932	
QCARM 7464862	QCARM 0616348	QCARM 1068191	QCARM 1122336	
QCARM 7464969	QCARM 0616349	QCARM 1068222	QCARM 1122338	
QCARM 7465288	QCARM 0616636	QCARM 1068352	QCARM 1122342	
QCARM 7465644	QCARM 0616687	QCARM 1068388	QCARM 1122355	
QCARM 7465765	QCARM 0616871	QCARM 1068434	QCARM 1122406	
QCARM 7465962	QCARM 0616906	QCARM 1068512	QCARM 1122415	
QCARM 7466191	QCARM 0616907	QCARM 1068516	QCARM 1122429	
QCARM 7477117	QCARM 0616912	QCARM 1068521	QCARM 1122431	
QCARM 7492376	QCARM 0616914	QCARM 1068525	QCARM 1122434	
QCARM 7622616	QCARM 0616916	QCARM 1068603	QCARM 1122439	
QCARM 0000218	QCARM 0616919	QCARM 1068612	QCARM 1122454	
QCARM 0000482	QCARM 0616920	QCARM 1068666	QCARM 1122462	
QCARM 0029611	QCARM 0616928	QCARM 1068739	QCARM 1122464	
QCARM 0447242	QCARM 0616935	QCARM 1068905	QCARM 1122485	
QCARM 0447252	QCARM 0616936	QCARM 1068922	QCARM 1122486	
QCARM 0447464	QCARM 0616939	QCARM 1068986	QCARM 1122489	
QCARM 0447871	QCARM 0616942	QCARM 1068988	QCARM 1122490	
QCARM 0448066	QCARM 0616947	QCARM 1068990	QCARM 1122492	
QCARM 0448362	QCARM 0616948	QCARM 1068995	QCARM 1122493	
QCARM 0449561	QCARM 0616950	QCARM 1069077	QCARM 1122504	
QCARM 0449883	QCARM 0616952	QCARM 1069112	QCARM 1122508	
QCARM 0450016	QCARM 0616955	QCARM 1069129	QCARM 1122515	
QCARM 0450317	QCARM 0616959	QCARM 1069363	QCARM 1122590	
QCARM 0450320	QCARM 0616963	QCARM 1069483	QCARM 1122672	
QCARM 0450425	QCARM 0616964	QCARM 1069555	QCARM 1122676	
QCARM 0450438	QCARM 0616965	QCARM 1069674	QCARM 1122684	
QCARM 0450606	QCARM 0616967	QCARM 1069705	QCARM 1122696	
QCARM 0452200	QCARM 0616970	QCARM 1069708	QCARM 1122701	
QCARM 0452326	QCARM 0616975	QCARM 1069710	QCARM 1122713	
QCARM 0452397	QCARM 0617114	QCARM 1069941	QCARM 1122715	
QCARM 0453129	QCARM 0617401	QCARM 1069945	QCARM 1122717	
QCARM 0453334	QCARM 0617453	QCARM 1069949	QCARM 1122720	
QCARM 0454071	QCARM 0617454	QCARM 1070014	QCARM 1122725	
QCARM 0454821	QCARM 0617456	QCARM 1070027	QCARM 1122726	
QCARM 0455016	QCARM 0617459	QCARM 1070034	QCARM 1122730	
QCARM 0455212	QCARM 0617460	QCARM 1070077	QCARM 1122731	
QCARM 0455341	QCARM 0617462	QCARM 1070081	QCARM 1122733	
QCARM 0456283	QCARM 0617517	QCARM 1070271	QCARM 1122735	
QCARM 0458346	QCARM 0617730	QCARM 1070640	QCARM 1122737	
QCARM 0460408	QCARM 0617756	QCARM 1070831	QCARM 1151573	
QCARM 0461296	QCARM 0617760	QCARM 1071192	QCARM 1151578	
QCARM 0462995	QCARM 0617902	QCARM 1071193	QCARM 1151582	
QCARM 0463153	QCARM 0617903	QCARM 1071194	QCARM 1151586	
QCARM 0465188	QCARM 0617947	QCARM 1071199	QCARM 1151591	
QCARM 0465502	QCARM 0617948	QCARM 1071201	QCARM 1151597	
QCARM 0465566	QCARM 0617951	QCARM 1071232	QCARM 1151603	
QCARM 0465730	QCARM 0617954	QCARM 1071244	QCARM 1151608	
QCARM 0465917	QCARM 0617957	QCARM 1071246	QCARM 1151611	
QCARM 0466056	QCARM 0617958	QCARM 1071248	QCARM 1151619	
QCARM 0466177	QCARM 0617961	QCARM 1071500	QCARM 1151620	
QCARM 0466366	QCARM 0617964	QCARM 1071502	QCARM 1151964	
QCARM 0466478	QCARM 0617978	QCARM 1071972	QCARM 1151965	
QCARM 0466936	QCARM 0618320	QCARM 1071980	QCARM 1151966	
QCARM 0467171	QCARM 0618324	QCARM 1071993		
QCARM 0467529	QCARM 0618325	QCARM 1072199		
QCARM_0467601	QCARM_0618336	QCARM_1073895		

Qualcomm Incorporated and Qualcomm Technologies, Inc. v. Arm Holdings plc
Documents Considered List

Exhibit C

Date	Description
Research	<p>Arm Holdings plc Form 20-F for the fiscal year ended March 31, 2025 NVIDIA Corporation Form 10-K for the fiscal year ended January 26, 2025 Qualcomm Incorporated Form 10-K for the fiscal year ended September 29, 2024 Qualcomm Incorporated, Form 10-Q for the quarterly period ended June 29, 2025 S&P Global Market Intelligence. 2025. WACC analysis: Qualcomm Inc. (QCOM). Capital IQ. SoftBank Group Annual Report 2024 Trial Proceedings, <i>Arm v. Qualcomm</i>, C.A. No. 22-1146 (MN), Volume 2, December 16, 2024</p> <p>https://download.intel.com/newsroom/kits/40thanniversary/pdfs/What_is_a_Microprocessor.pdf https://group.softbank/en/ir/financials/annual_reports/2025/message/arm https://group.softbank/en/news/press/20160905 https://newsroom.arm.com/blog/arm-computex-2025 https://nvidianews.nvidia.com/news/nvidia-and-softbank-group-announce-termination-of-nvidias-acquisition-of-arm-limited https://nvidianews.nvidia.com/news/nvidia-to-acquire-arm-for-40-billion-creating-worlds-premier-computing-company-for-the-age-of-ai https://tech.facebook.com/reality-labs/ https://www.arm.com/company https://www.capitaliq.com https://www.cnbc.com/2023/09/14/arm-ipo-arm-starts-trading-on-the-nasdaq-in-win-for-softbank.html https://www.ft.com/content/5b191c4c-119f-4f97-bc61-622d20bfa46d https://www.ft.com/content/95367b2b-2aa7-4a06-bdd3-0463c9bad008 https://www.lawinsider.com/dictionary/standard-margin https://www.linkedin.com/in/%E6%99%93%E6%B0%91-%E9%A9%AC-9381bb15a/ https://www.linkedin.com/in/dawn-hill-montemagni/ https://www.linkedin.com/in/mike-neilio-5358141/ https://www.linkedin.com/in/siliconip/ https://www.linkedin.com/in/tejas-krishnamohan-aa24a91/ https://www.linkedin.com/in/will-wyatt-ab6bb2b/ https://www.phonearena.com/galaxy-tab-s10-release-date-price-features-news https://www.sec.gov/Archives/edgar/data/804328/000080432824000075/qcom092924ex21.htm</p>

EXHIBIT D

EXHIBIT 4

**United States District Court
District of Delaware
Civil Action No. 1:24-cv-00490-MN**

**Qualcomm Incorporated and
Qualcomm Technologies, Inc.**

v.

Arm Holdings plc

**Expert Report of Eric A. Posner
August 8, 2025**

HIGHLY CONFIDENTIAL – ATTORNEYS’ EYES ONLY

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

I. Qualifications and Testimony

1. I am the Kirkland and Ellis Distinguished Service Professor at the University of Chicago Law School. Before joining the Chicago faculty in 1998, I taught at the University of Pennsylvania Law School. I was educated at Yale College and Harvard Law School.

2. I have specialized in economic analysis of law since the start of my academic career in 1993. Law and economics is an interdisciplinary field in which economic principles, models, and theories are used to analyze the law. It is a field in which both law professors and economics professors are active. My particular specialty is the application of economic principles to problems of market competition, including problems addressed by antitrust law and other areas of U.S. law and policy.

3. I have extensive academic experience in the economics of competition. I have taught classes, given lectures, and written frequently about this topic. I have published numerous articles and one book on antitrust and competition policy. I have published in peer-reviewed economics journals, peer-reviewed law and economics journals, and law reviews. I was the editor of a peer-reviewed law and economics journal, the Journal of Legal Studies, for twelve years. I have written dozens of referee reports for peer-reviewed economics journals, and been an active member of the American Law and Economics Association, having served two terms on the board of directors.

4. I worked on antitrust and competition issues while serving as Counsel to the Assistant Attorney General of the Antitrust Division in the Department of Justice from 2022 to 2023.

5. I have testified or made presentations on competition policy and economics before the Committee on the Judiciary, Subcommittee on Antitrust, Commercial, and Administrative Law, U.S. House of Representatives (on the economics of labor market competition); the Federal Trade Commission (on competition in labor markets); the Department of Justice, Antitrust Division (on merger policy); the National Association of Attorneys General (on the economics of labor competition); the Organization for Economic Co-operation and Development (on labor competition); and numerous practitioner and academic groups.

6. I am a member of the American Academy of Arts and Sciences.

7. A list of my recent expert engagements can be found at Annex 1.

8. My curriculum vitae can be found at Annex 2.

II. Materials Considered

9. I have consulted the materials listed in Annex 3.

III. Introduction and Summary

10. I have reached the following conclusions.

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

11. Arm licenses an instruction set architecture (ISA), which is an abstract model that enables computer software to interface with the central processing units (CPUs) in a computer.¹ As Arm describes it, the “ISA provides the only way through which a user is able to interact with the hardware.”² Arm’s ISA allows developers to produce software that works on different devices and is consulted in connection with the construction of devices from components manufactured by different companies.³ The Arm ISA has been widely adopted by software developers and hardware designers and manufacturers.⁴ There are a limited number of different ISAs that are in common use, including, for example Intel’s x86, [REDACTED] and which is used in Intel’s own chips: Intel does not license the x86 architecture to third parties.⁶ The Arm ISA has achieved dominance in other sectors of the semiconductor industry, including the chips for mobile devices like smartphones, consumer electronics, and “internet of things” (IoT) devices. As a result, Arm has a monopoly or a dominant position as the supplier of the Arm ISA to companies that design and manufacture CPUs for Systems-on-a-Chip (SoCs) that are compatible with the Arm ISA. An SoC is an integrated circuit that combines one or more CPUs with memory, input/output, and other features, and is installed in mobile devices and other products.⁷ Arm’s ISA ecosystem exhibits strong network effects. According to Arm, its ISA is the “most ubiquitous computer architecture on the planet.”⁸

12. Qualcomm designs and markets SoCs that are used in a range of products, including mobile phones, laptops, automobiles, data centers, and IoT devices. Qualcomm designs SOC’s that are compatible with the Arm ISA. Qualcomm uses Arm’s ISA through two types of licenses. Under an Architecture License Agreement (ALA), Qualcomm designs Arm-compliant custom cores and incorporates them in SoCs. Qualcomm (or any other SoC designer) needs an Arm license to sell SoCs that are compatible with the Arm ISA, and Arm is the only licensor of the Arm ISA. Under Technology License Agreements (TLAs), Qualcomm uses “off-

¹ Arm.com, *Glossary: Instruction Set Architecture (ISA)*, <https://www.arm.com/glossary/isa> (last visited August 5, 2025).

² *Id.*

³ Arm.com, *Architecture: The Basis for Innovation in the Digital World*, <https://www.arm.com/architecture> (last visited August 5, 2025) (“All Arm-based CPU designs are built on the same architecture, ensuring software compatibility while enabling market or usage- specific innovation”).

⁴ Mike Johnson, *Arm Holdings CEO Predicts 50% Data Center CPU Market Share by 2025*, WebProNews (July 31, 2025), <https://www.webpronews.com/arm-holdings-ceo-predicts-50-data-center-cpu-market-share-by-2025/>; see also Mohamed Awad, *Half of the Compute Shipped to Top Hyperscalers in 2025 will be Arm-based*, Arm Newsroom (April 1, 2025), <https://newsroom.arm.com/blog/half-of-compute-shipped-to-top-hyperscalers-in-2025-will-be-arm-based>.

[REDACTED]
[REDACTED]
[REDACTED] Grisenthwaite Tr. at 36:3-14 (“Q. And I think you mentioned this, but just to be clear, Intel does not make x86 available for license; correct? A. I’m not entirely sure what Intel’s model has been. They certainly don’t have a wide licensing base, but there’s a relationship in some way between Intel and AMD and I believe there are some x86 implementations in China. I have no idea what the licensing arrangements from for Intel, so I can’t speak definitively for Intel’s business model.”).

⁷ Arm.com, *Glossary: SoC Development*, <https://www.arm.com/glossary/soc-development> (last visited August 5, 2025), (“An SoC (System-on-a-Chip) is a complete processing system contained in a single package that contains multiple processing parts. The main components of an SoC typically include a central processing unit, memory, input and output ports, peripheral interfaces and secondary storage devices.”).

⁸ Tim Bradshaw, *Rene Haas: ‘Arm has the most ubiquitous computer architecture on the planet,’* Financial Times (June 7, 2024) <https://www.ft.com/content/5b191c4c-119f-4f97-bc61-622d20bfa46d>.

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

the-shelf’ (OTS) cores designed by Arm. Qualcomm incorporates custom cores or OTS cores in SoCs, which it sells to Original Equipment Manufacturers (OEMs) of various computing devices. Other firms compete with Qualcomm by offering SoCs or other chips that are also compatible with the Arm ISA. Within the Arm ISA ecosystem, there are multiple SoC sectors because the OEMs demand different kinds of SoCs for their different computing products. Qualcomm sells SoCs to OEMs of cell phones, cars, laptops, data center, VR/AR, wearables, audio, wireless networks, IoT devices, cameras, and smart homes.⁹

13. Qualcomm contends that Arm has engaged in a number of unfair acts and practices, including threatening to terminate Qualcomm’s ALA, breaching existing contracts (including by refusing to provide technology necessary for Qualcomm to ensure the architectural compliance of its custom core designs and by refusing to provide commercially reasonable offers for licenses to Arm OTS cores), and refusing to engage in [REDACTED] negotiations for Qualcomm’s licenses. Qualcomm contends that Arm’s conduct is part of a broader scheme to undermine Qualcomm’s ability to compete with Arm’s products. First, Arm is obstructing or attempting to obstruct Qualcomm from designing and marketing products that use Qualcomm custom core designs, in order to inhibit Qualcomm from competing with Arm’s OTS core designs. Second, Arm is actively attempting to sell its own SoC designs at the expense of its own licensees, including Qualcomm.¹⁰ To that end, Qualcomm contends, Arm seeks to design and manufacture its own chips and SoCs, and seeks to drive Qualcomm away from designing custom cores, or to drive Qualcomm out of selling chips and SoCs entirely. Arm seeks to drive Qualcomm away from designing custom cores, even if it means Arm loses royalties on those custom cores in the short term, because Arm’s margins on selling and/or licensing its own cores, chips and SoCs would be higher in the long term than the margins on existing ALA licenses—and Arm is unhappy with the level of royalties that Qualcomm is required to pay under the ALA. Moreover, although Qualcomm has historically been one of Arm’s most important customers, it appears that Arm is willing to sacrifice the licensing fees and product royalties that it can obtain from supporting Qualcomm in launching products because, in the long term, Arm believes that through engaging in anticompetitive conduct to push Qualcomm to rely on OTS cores, or out of the ecosystem entirely, it will gain more profits from either its own chips or from TLA royalties than it will lose in ALA royalties.

14. If Arm succeeds, it will have extended its dominance over the Arm ISA ecosystem, leaving it with not only control of the ISA itself and the design and sale of its own cores, but also with a significant role in designing and selling SoCs. These actions are anticompetitive and amount to unfair competition for several reasons.

15. First, Arm will be able to use its control of the ISA, such as by cutting off the ability to sell Arm-compliant chips, to disadvantage or eliminate any competitor—not just Qualcomm—in the ISA ecosystem, including the portion of the ecosystem that encompasses the design, manufacture, and sale of SoCs directly to OEMs, and to strengthen entry barriers in the ISA ecosystem. Because competitors and entrants who design and sell chips need access to the ISA licenses, and they require Arm’s consent and cooperation to achieve access to Arm

⁹ Qualcomm, Inc., *Products*, <https://www.qualcomm.com/products> (last visited August 5, 2025).

¹⁰ Michael Acton, *Arm to explore designing its own chips, chief executive says*, Financial Times (July 30, 2025) Accessed August 5, 2025. <https://www.ft.com/content/735c8a2d-0ce0-49d6-934f-8ace3e927108?shareType=nongift>.

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

technology and maintain a strong competitive position, they will be at a competitive disadvantage to Arm. Arm will be able to delay or prevent entry of new chip designers and manufacturers because even highly sophisticated firms that can develop new chips will not be able to access the ISA ecosystem without Arm’s cooperation. In addition, because of the high margins on chips and Arm’s technological sophistication, it is likely that Arm has an incentive to eliminate chip competitors.¹¹ This behavior is known among economists as “input foreclosure.”

16. Second, by reducing competition in designing and selling chips, Arm (and any remaining competitors) will be able to raise prices and skimp on innovation without fear of being undercut or outperformed by Qualcomm or other licensees that make SoCs using custom cores that deliver higher performance. Because many OEMs depend on Arm-compliant chips, they will be forced to accept less impressive performance while paying higher prices—and likely passing on their costs to consumers in the form of higher prices.

17. Third, Arm is attempting to escape its ALA with Qualcomm so it can eliminate Qualcomm as a competing CPU developer, rather than compete on the merits with Qualcomm CPUs. Arm is unhappy with the royalty rate under the ALA that it negotiated with Qualcomm. Because Arm earns a higher royalty under the TLA, Arm would profit in the long term by forcing Qualcomm to stop designing custom cores and putting its resources into using OTS cores, even if it means Arm loses royalties on ALA cores in the short term. Having failed so far to terminate the ALA—despite attempts to do so—Arm can achieve roughly the same result by undermining Qualcomm’s ability to design custom Arm-compliant cores. If Arm succeeds, it will have achieved the same result as license termination. This is bad-faith behavior and a form of unfair competition because it is not competition on the merits—through pricing and innovation.

18. Fourth, Arm’s conduct described in this report may reduce the likelihood that more efficient and innovative ISAs will take root and displace Arm’s ISA. Under the status quo, Arm’s chipmaker customers have an incentive to move from Arm’s ISA if Arm raises prices and degrades quality and service. But if Arm itself takes over a portion of those customers’ business, and either weakens them or drives them out of business, then they will have less ability to support the development of a new ISA. As a result, new ISAs will have trouble attracting chipmakers and thus face greater barriers to entry.

19. Fifth, Arm’s attempts to extend its dominance of the ecosystem will spook even chipmakers who are not pushed out of designing SoCs, by revealing that Arm will no longer keep its commitment to neutrality and openness. This could have immediate anticompetitive consequences. As part of its traditional business model, Arm meets with its chipmaker customers to learn their business plans and technological needs so that it can improve the ISA. But if those customers believe that Arm may start competing with them in their line of business, they will be reluctant to share confidential information, which in turn will retard the development of Arm’s ISA.

IV. Factual Background

¹¹ Conversation with Gerard Williams, Qualcomm Senior VP Engineering.

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

A. Relevant Parties and Industry

20. Arm is a technology company that licenses the Arm ISA to other companies, including Qualcomm. The Arm ISA is a set of instructions that define how software should communicate with the CPU or the cores that compose the CPU.¹² Companies that make devices, or hardware for devices, must use chips that are compatible with the Arm ISA so that their devices will run common software programs written for the Arm ecosystem.¹³ Arm also designs OTS cores that a licensee can incorporate into SoC designs. An SoC is an integrated circuit that contains the CPU and other technologies.¹⁴ By integrating multiple cores and other components (CPU, modem, camera, etc.) on a common SoC, manufacturers can increase the efficiency of their chips and improve the functionality of the devices they power, compared to devices in which chips are not integrated.¹⁵

21. Arm’s longstanding business model was to license the ISA and certain Arm-compliant technology to customers on a neutral and open basis.¹⁶ That meant that Arm would license all qualified chipmakers while providing them with technological support, and give them the freedom to design and sell architecturally compliant chips for new or developing sectors of the semiconductor industry.¹⁷ The more devices that use Arm-based chips, the stronger the incentives for chip and core designers to obtain licenses from Arm so that they can produce Arm-compliant hardware for those devices that run the software widely developed for the Arm ecosystem. And the more Arm-complaint devices there are, the greater the incentive for software

¹² Arm.com, *Architecture: The Basis for Innovation in the Digital World*, <https://www.arm.com/architecture> (last visited August 7, 2025) (“The Arm CPU Architecture defines what a CPU must do when software runs on it”).

¹³ *Id.* (“Arm’s architecture specifications are licensed by partners, who create compliant silicon chips based on them.”).

¹⁴ Arm.com, *Glossary: SoC Development*, <https://www.arm.com/glossary/soc-development> (last visited August 7, 2025) (“An SoC (System-on-a-Chip) is a complete processing system contained in a single package that contains multiple processing parts. The main components of an SoC typically include a central processing unit, memory, input and output ports, peripheral interfaces and secondary storage devices.”).

¹⁵ *Id.* (“While the initial costs of designing and developing an SoC may be higher, many developers choose this approach to minimize power consumption and provide significantly more differentiation. Traditionally, the vast majority of energy is spent on data and bus address cabling. With SoCs, components are internally connected on a single chip which reduces cabling requirements and minimizes power consumption. Proprietary IPs and accelerators can also be integrated onto custom SoCs to enhance performance and power efficiency. Other advantages of the SoC include faster execution due to high-speed processor and memory, smaller, more compact chips, improved performance and efficiency, simpler system designs, faster time to market and greater security at both the firmware and hardware levels. Solutions on the market today offer SoC developers the ability to design faster. They offer a range of configurable, modifiable subsystems for a wide range of system types. The systems pre-integrate the processor and interconnect IP with the most relevant system components.”).

¹⁶ See e.g., QCVARM_1066811, at -813 (According to Arm’s CEO, Arm’s business model “largely stems around neutrality” and it’s “a highly neutral platform, in terms of customer access, and that neutrality allows customers to not only feel that they’re not being disadvantaged.”); QCVARM_0717008, at -009 (According to Arm’s co-founder, the “whole point about Arm was always that it was the Switzerland of the semiconductor industry, dealing very even-handedly with all of its 500-plus licensees”); QCVARM_0717291, at -291 (Arm “is built on a foundation of neutrality. Rather than build chips, Arm merely designs their blueprints. The company then licenses the IP to almost every major semiconductor maker without directly competing against them.”); Arm’s “what is” series, *What is... CPU architecture*, (August 18, 2021) www.youtube.com/watch?v=KGHdDVLnKJM&t=144s (Arm’s “widely licensed architecture that everyone can make use of” and that “is easy to access” has been “a big part of the secret to Arm’s success”); M. Williams Tr. at 54:11-19; Grisenthwaite Tr. at 18:2-23:5; Haas Tr. at 231:22-234:23; Hughes Tr. at 78:16-80:21.

¹⁷ Conversation with Gerard Williams, Qualcomm Senior VP Engineering.

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

developers to develop software that runs on Arm-compliant devices—which in turns increases customer demand for those devices and thus the incentive of OEMs to manufacture those devices, in a virtuous circle. As explained by Arm, “[e]verything has to be able to run everywhere” and a “strong ecosystem of users is vital.”¹⁸ Thus, “Arm’s success has come from the wide accessibility of its architecture” and Arm’s “fostering of an enormous ecosystem of developers.”¹⁹ As the quantity and variety of software increases, device manufacturers benefit more from using Arm-compliant chips. A common ISA also facilitates the integration of hardware components supplied by different vendors.²⁰

22. When Arm began developing the Arm ISA, other ISAs existed or were in development.²¹ Intel’s x86 was the most prominent, and still holds significant share in the personal computing and data center sectors, but Intel did not license x86 to other companies because it did not want to compete with other chipmakers.²² Other companies and groups developed ISAs but their ISA found few followers because of concerns about openness or dissatisfaction with the design choices embedded in those other ISAs, or because they were designed for niche devices.²³ Arm’s ISA was the more attractive in part because it had properties that better fit the needs of chipmakers at the time than other ISAs did, but it is not clear that Arm’s ISA was technically superior to other ISAs, in the sense of being essential to the design of higher quality chips.²⁴ The functionality of chips depends more on the microengineering choices of chip designers like Qualcomm than on the underlying ISA.²⁵ The most important factor in the success of Arm’s ISA appears to be that its open, neutral model appealed to chip designers and manufacturers, as it greatly increased the likelihood that many companies would use it, allowing every licensee to interact with other licensees and software developers.²⁶ As Arm CEO Rene Haas said in response to a question about Arm’s advantages over Intel, “There’s a lot of things in our favor, one of them is quite frankly the fact that we have an open model, where our products can be built at any fab by any company. If you’re looking at x86, you’re looking at two people

¹⁸ ARMQC_02727610 at -617.

¹⁹ *Id.*; [REDACTED]

²⁰ Arm.com, *Architecture: The Basis for Innovation in the Digital World*, <https://www.arm.com/architecture> (last visited August 7, 2025) (“All Arm-based CPU designs are built on the same architecture, ensuring software compatibility while enabling market or usage- specific innovation”); conversation with Gerard Williams, Qualcomm Senior VP Engineering.

²¹ Conversation with Gerard Williams, Qualcomm Senior VP Engineering.

²² [REDACTED] The only known x86 licensee is AMD who received their license as part of a settlement agreement. *See e.g.*, Amd.com, *Intel Antitrust Rulings*, <https://www.amd.com/en/legal/notices/antitrust-ruling.html>, (last visited August 7, 2025); QCVARM_0716360 at -382 (quoting Rene Haas: “Intel would have a license x86, and they did to one guy, AMD, because they were forced to.”); Grisenthwaite Tr. at 36:3-14 (“Q. And I think you mentioned this, but just to be clear, Intel does not make x86 available for license; correct? A. I’m not entirely sure what Intel’s model has been. They certainly don’t have a wide licensing base, but there’s a relationship in some way between Intel and AMD and I believe there are some x86 implementations in China. I have no idea what the licensing arrangements from for Intel, so I can’t speak definitively for Intel’s business model.”).

²³ Conversation with Gerard Williams, Qualcomm Senior VP Engineering.

²⁴ *Id.*; *see also* [REDACTED]

²⁵ *Id.*

²⁶ *Id.*; M. Williams Tr. at 54:11-19; Grisenthwaite Tr. at 18:2-23:5; Haas Tr. at 231:22-234:23; Hughes Tr. at 78:16-80:21.

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

who build it.”²⁷ As has often been pointed out, it is important that people agree to drive on the left side or the right of the road; it is not important which side is chosen as long as everyone agrees on the same side. A common ISA solves a coordination problem in the industry, but it may not matter much which ISA is used.

23. In return, chipmakers obtained Arm licenses and collaborated with Arm to develop new products. Arm provided support to its licensees by sharing business plans with them, and convening meetings in which Arm and licensees exchange business and technological ideas.²⁸ In the course of collaboration, licensees would share confidential business information with Arm. According to the Federal Trade Commission, this confidential information included “strategic plans, project timelines and development schedules, manufacturing process plans, use cases, customer requirements, and product bugs or challenges.”²⁹ Arm has issued licenses to hundreds of companies.³⁰ As a result, the Arm ISA is now a de facto standard used in “virtually all” mobile phones and internet of things (IoT) products, among other products.³¹

24. Arm has marketed the Arm ISA technology through two kinds of licenses. Under the ALA, the licensee is authorized to sell its own custom designed cores that are compatible with the Arm ISA (“custom cores”). Under the TLA, the customer licenses Arm’s OTS cores. Under both licenses, the licensee both designs and (usually via outsourcing to a semiconductor foundry) manufactures the physical chip that is in turn sold to OEMs. In addition to Qualcomm, Arm licenses its architecture to a dozen or so other firms, including [REDACTED].³² Qualcomm does not directly compete with all of these firms as some are not merchant silicon vendors. For example, Apple manufactures the end product, including the iPhone, and incorporates its custom chips into its own end products, and does not sell its chips to other OEMs.

25. Qualcomm designs both custom cores and SoCs. Qualcomm incorporates into its SoC designs both its own custom-made cores that are compliant with the Arm ISA under the ALA and Arm’s OTS cores under the TLA, depending on the technological and economic needs of its OEM customers. Qualcomm’s SoCs thus reflect both Qualcomm’s engineering contributions, while also being Arm-based.³³ Qualcomm’s SoCs are used by OEMs, which manufacture various devices including smartphones, automobiles, IoT devices, personal computers, automobiles, and data center servers.³⁴ [REDACTED]

²⁷ QCVARM_0716360 at -389 (Haas referring to Intel and Amd).

²⁸ ARM_00103918 (Qualcomm TLA); ARM_00055357 (Qualcomm ALA); ARMQC_02729064; *see also* M. Williams Tr. at 31:10-16, 58:13-59:13.

²⁹ *In re Nvidia Corp., SoftBank Grp., & Arm, Ltd.*, Docket No. 9404 ¶ 27 (FTC filed Dec. 6, 2021) (hereinafter “FTC Compl.”).

³⁰ *See e.g.*, QCVARM_1066820 at 149; QCVARM_1066811 at -813.

³¹ Annual Report and Consolidated Financial Statements For the year ended 31 March 2024, p. 1, Arm Holdings Limited (May 29, 2024) <https://investors.arm.com/static-files/5e34983c-cbb5-461c-b6ca-5749f6d7efd9>; QCVARM_1070993; QCVARM_1012343 at -352, -358, -379, -382 (Arm has “maintained market share in the mobile applications processor market of greater than 99% for many years, by virtue of all key mobile operating systems depending on Arm processors.”).

³² Weidmann Tr. at 35:9-36:14 (identifying only [REDACTED] other competitors). Arm also licenses its architecture to other firms through its Arm Total Access Subscriptions. *See* Awad Tr. at 30:2-31:5. The evidence on the number of other competitors is conflicting, but there appear to be fewer than [REDACTED] and as few as [REDACTED].

³³ Conversation with Gerard Williams, Qualcomm Senior VP Engineering.

³⁴ Qualcomm, Inc., *Products*, <https://www.qualcomm.com/products> (last visited August 5, 2025).

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

[REDACTED]

26. Qualcomm began licensing the Arm ISA in 1997.³⁷ Qualcomm and Arm first agreed to an ALA in 2003.³⁸ That licensing agreement was renegotiated in 2013, and includes annexes for different versions of the ISA and related technology.³⁹ [REDACTED]

[REDACTED] In turn, Arm has profited significantly from its relationship with Qualcomm. For example, in 2024 Qualcomm accounted for 10% of Arm’s \$3.2 billion revenue.⁴¹

27. This relationship has been mutually profitable. Qualcomm benefited from its access to the Arm ISA and related technology, which enabled it to make chips for mobile phones and many other devices. In addition to receiving royalties and other payments from Qualcomm, Arm benefited from the expansion of the Arm ISA network that occurred as Qualcomm penetrated various chip sectors. Software developers, OEMs, consumers, and others benefited as more and more devices powered by Qualcomm chips were manufactured and marketed—in a classic illustration of the power of network effects, where the value of a good or service to a user increases as more people use it.⁴² This long-term course of dealing between Qualcomm and Arm relied on Arm’s initial business model of openness and neutrality, as Qualcomm and other chip designers were willing to make a long-term commitment to the Arm ISA because of this promise of neutrality.

28. In March 2021, Qualcomm acquired Nuvia, a startup with expertise in CPU and SoC development for the data center sector.⁴³ After acquiring Nuvia, Qualcomm renewed its development of custom CPU cores and SoCs that enabled it to further strengthen and expand its share of the ISA ecosystem for mobile and other segments. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] Qualcomm, Inc., *Products*, <https://www.qualcomm.com/products> (last visited August 5, 2025); QCVARM_1120267 at -308; QCVARM_0848033.

³⁷ Second Amended Complaint, D.I. 137 (SAC) ¶¶ 3, 55.

³⁸ *Id.*

³⁹ ARM_00055357 (QC ALA); QCARM_0343120 (Annex 1 Armv8-A Architecture); QCARM_0338573 (Annex 1 V8 Next Architecture); QCARM_0343954 (Annex 1 ArmV9-A Architecture).

⁴¹ ARMQC_00000640 at -643, -646 (the 10% calculation includes ALA, TLA, and peripheral license revenue).

⁴² Joseph Farrell & Paul Klemperer, *Coordination and Lock-In: Competition with Switching Costs and Network Effects*, Handbook of Industrial Organization, Chapter 31 at 1971 (2007).

⁴³ SAC ¶ 59.

[REDACTED]

[REDACTED]

[REDACTED]

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

29. At around this time, Arm apparently decided that it should reorient its business toward SoC design. That would mean competing with its own customers, including Qualcomm.⁴⁵ At the same time, and apparently in furtherance of its goal to shift its business model, Arm sought to merge with Nvidia, a highly successfully technology company that manufactured chips for a variety of sectors.⁴⁶ Regulators in Europe, the United Kingdom, and the United States expressed concern because Nvidia competed with other Arm licensees.⁴⁷ The Federal Trade Commission, for example, observed that the merged firm would have the ability to reduce competition “through various mechanisms, including by manipulating levers such as Arm’s pricing, the terms and timing of access to Arm’s Processor Technology (including withholding or delaying access), Arm’s technological developments and features, and Arm’s provision of service and support, among other mechanisms.”⁴⁸ The FTC further argued that the merged firm would have “strong incentives” to undermine rivals because the “profits on additional sales that Nvidia would earn as a chip supplier are generally higher than the profits that Arm would earn from licensing its Processor Technology to Nvidia’s rivals.”⁴⁹ This “ability/incentive framework” is a standard method for evaluating the competitive effects of vertical mergers.⁵⁰

30. The FTC further noted that the merger would reduce the value of Arm’s ISA for the industry as the industry learned that it could not rely on Arm to maintain its policy of openness and neutrality, and this in return would reduce innovation in the sector.⁵¹ The merger would result in “a critical loss of trust in Arm by its own licensees” who will be “less likely to share competitive sensitive information with Arm” because Nvidia would be able to use this information for its chip design.⁵² In the course of its analysis, the FTC noted that there are no close substitutes for ARM’s ISA, and even if there were, switching among ISAs is costly and

[REDACTED]

⁴⁵ SAC ¶ 70; *see generally* FTC Compl.; *see also* Michael Acton, *Arm To Explore Designing Its Own Chips, Chief Executive Says*, Financial Times, Jul. 30, 2025, <https://www.ft.com/content/735c8a2d-0ce0-49d6-934f-8aee3e927108> (Accessed Aug. 5, 2025).

⁴⁶ *See* QCVARM_1018853; QCVARM_1071021; [REDACTED]

⁴⁷ *See generally* FTC Compl.; QCVARM_1018853 (Competition & Mkts. Auth., Nvidia - Arm: A Report to the Secretary of State for Digital, Culture, Media & Sport on the Anticipated Acquisition by NVIDIA Corp. of Arm Ltd. (Jul. 20, 2021)) ¶¶ 1.6-1.9 (finding competition concerns); QCVARM_0715414 at -414 (European Commission Press Release IP/21/5624, Mergers: Commission Opens In-Depth Investigation Into Proposed Acquisition of Arm by NVIDIA (Oct. 27, 2021)) (“the Commission has concerns that the merged entity would have the ability to restrict or degrade access to Arm’s technology by providers of processor products NVIDIA may compete with”).

⁴⁸ FTC Compl. ¶ 8.

⁴⁹ *Id.* ¶ 9.

⁵⁰ *See, e.g.,* Carl Shapiro, *Vertical Mergers and Input Foreclosure Lessons from the AT&T/Time Warner Case*, 59 Rev. of Indus. Org. 303, 305-06 (2021).

⁵¹ FTC Compl. ¶¶ 10-11.

⁵² *Id.* ¶ 10.

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

time-consuming.⁵³ To prevent these and other anticompetitive harms, the FTC sued to block the merger.⁵⁴

31. Arm and Nvidia abandoned the merger amid the opposition from the FTC and other antitrust regulators. But the FTC’s criticisms of the merger reflected a broader concern that Arm would and could abuse its power over its ecosystem by entering the SoC business, whether through acquisition of a downstream firm or through other means. If Arm could not increase its margins by merging with Nvidia, it could do so by expanding into the design and manufacture of chips unilaterally. By simultaneously undercutting or eliminating its ALA licenses, Arm would give itself a competitive advantage and force its customers to use OTS cores through TLAs.⁵⁵ To do so in a procompetitive manner (e.g., by innovation, competition on price and quality), Arm would need to develop its own chips and improve the OTS cores that were being overtaken by Qualcomm’s custom cores.⁵⁶ But, consistent with the FTC’s logic, Arm had the incentive, and apparently the will, to facilitate its entry into the chip sectors by undermining its profitable relationship with Qualcomm. Arm put this strategy into operation by degrading service under the ALA, for example by failing to provide Arm technology, or negotiate in good faith, while, as an initial step, entering into a contract to supply data center chips for Meta, beginning this year.⁵⁷ Arm also increased licensing fees and royalties due under the TLA.⁵⁸

B. Industry Context

32. The Arm ISA ecosystem encompasses all of the companies, devices, and software that make use of the Arm ISA. According to Arm, “[n]o other business ecosystem comes close to this group of silicon, system and software companies” which has shipped more than 310

⁵³ FTC Comp. ¶ 67; [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED] effects, see Helena Perrone, *Chips in on a Merger: The Arm-Nvidia Case*, 98 Int’l J. of Indus. Org. 103130 (Jan. 2025).

⁵⁵ Haas Tr. at 234:10-240:23; Williamson Tr. at 120:18-130:22; Abbey Tr. at 125:7-134:25; ARMQC_02739661.

⁵⁶ SAC ¶ 152; QCVARM_1018853; [REDACTED]
[REDACTED]
[REDACTED]

⁵⁷ QCVARM_1012399; ARMQC_02762992; see also SAC ¶¶ 12-19, Grisenthwaite Tr. at 157:2-10; Weidmann Tr. at 171:14-72:17, 174:6-22.

⁵⁸ For example, compare QCVARM_1019083 at -097 (2019 licensing fees for [REDACTED]
[REDACTED]) with QCVARM_0526828 at -829 (2024 licensing fees offer for [REDACTED]
[REDACTED] with increased rates). See also, QCVARM_0618354 (Qualcomm’s acceptance of increased rates); QCVARM_0618382; QCVARM_0618384 (Arm’s further increase of rates for [REDACTED]
[REDACTED]); [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

billion Arm-compliant chips to date and includes “over 22 million developers building on Arm.”⁵⁹ At the top level of the Arm ISA ecosystem is the Arm ISA, which Arm controls.

33. The Arm ISA. The ISA is a set of instructions that a computer’s processor uses to control hardware.⁶⁰ Technology companies compete to develop ISAs, some of which are then licensed to chip designers and other companies. There are a limited number of different ISAs that are in common use, including, for example Intel’s x86, but, Intel does not license the x86 architecture to third parties, and Intel’s chips are less suitable than Arm-compliant chips for a range of devices, especially mobile devices.⁶¹ The Arm ISA has achieved dominance in other sectors of the semiconductor industry, including the chips for mobile devices like smartphones,⁶² consumer electronics, and IoT devices.⁶³ Chip designers who make Arm-compliant chips for mobile phones and certain other products do not treat non-Arm ISAs as substitutes for the Arm ISA. If a company switches to a non-Arm ISA, it would not be able to sell its products in the Arm ecosystem or use the software of the “22 million developers building on Arm.”⁶⁴ Because many sectors, for example, mobile, are dominated by Arm-compliant products, the developer would be excluded from large sectors. The relevant ecosystem is thus limited to the Arm ISA. Arm alone sells Arm ISA licenses to customers, while, as noted, Qualcomm and many other companies license the Arm ISA. The term “ecosystem” is used by Arm and the industry to describe these relationships because the term evokes multiple companies of different types organizing their businesses around a single technology, one which provides value by coordinating the behavior of the disparate groups or entities.

34. An ISA ecosystem is characterized by significant entry barriers. Like most intellectual property, an ISA ecosystem features high fixed costs and low marginal costs. An ISA developer must invest significant resources to create the ISA and encourage other firms and software developers to join the ecosystem; once that has occurred, the major variable cost is the

⁵⁹ ARMQC_02720799 at -799; Arm Ed. Team, *The Arm Ecosystem: Powering AI Everywhere – From Cloud to Edge* (May 19, 2025), <https://newsroom.arm.com/blog/arm-computex-2025> (last visited Aug. 5, 2025).

⁶⁰ SAC ¶ 46.

■ Grisenthwaite Tr. at 36:3-14 (“Q. And I think you mentioned this, but just to be clear, Intel does not make x86 available for license; correct? A. I'm not entirely sure what Intel's model has been. They certainly don't have a wide licensing base, but there's a relationship in some way between Intel and AMD and I believe there are some x86 implementations in China. I have no idea what the licensing arrangements from for Intel, so I can't speak definitively for Intel's business model.”).

⁶² See Arm, Consumer Technologies: Smartphones, <https://www.arm.com/markets/consumer-technologies/smartphones> (last visited Aug. 5, 2025) (“99% of all Smartphones Powered by Arm”).

⁶³ ARMQC_00001136 at -146.

⁶⁴ See *supra* note 59; ■ ARM_00089058 at -058 (“Switching that entire world to RISC-V will take a LOT of investment and time, and I am sceptical that ■ has the patience for such a play[.]”); ARM_00110020 at -029 (switching to a new ISA “[s]eems unlikely,” and would require, among other things, “coalesce[ing] an entire hardware architecture at the same times [sic] as building implementations,” an “entire software ecosystem of operating system, hypervisors, security compilers, tools, debug, etc. must be created,” entire ecosystem “has to make a hard switch from Arm,” and loss of “cross-platform opportunity”).

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

virtually costless process of issuing licenses, along with support and the development of updates.⁶⁵

35. Other technology companies would have difficulty displacing a dominant ISA like Arm because they would be required to make an upfront investment in order to develop a superior ISA, and then would have to pay large sums (or give large discounts off fees and royalties) to firms in the Arm ecosystem to abandon Arm’s ISA for a new ISA that other firms might never join.⁶⁶ Among other things, software companies lack any incentives to produce software for a competing ISA because Arm does not charge software companies royalties. Software vendors will want to see significant scale before they invest in a new architecture so that they will be able to sell to a large customer base. Additionally, if Arm’s anticompetitive actions are successful and unchecked, firms may be reluctant to risk retaliation by Arm and join a new ISA whose sponsor may similarly lock firms into a controlled ecosystem only to later increase rates. Until the new ISA entrant obtains a sufficient ecosystem share, which it might never accomplish, the entrant may be forced by competition to charge a low price close to marginal cost, which is to say close to zero. If the ISA entrant does not obtain a large share, the firm will almost certainly be unable to recover its investment. For that reason, entry will be rare or nonexistent. Some companies have worked to develop an alternative, open-source ISA known as RISC-V. [REDACTED]

36. Arm-compliant hardware and software. A number of firms that license the Arm ISA are sellers of Arm-compliant SoCs within the Arm ecosystem. These firms license the right to sell Arm-compliant cores under the ALA, license Arm designed cores under the TLA, or both. A licensee may use a combination of its custom designs and Arm’s designs in its product. Qualcomm incorporates both its custom cores and Arm’s OTS cores into SoCs. Because the

⁶⁵ [REDACTED]
[REDACTED]
[REDACTED] ARM_00110020 at -029 (switching to a new ISA “[s]eems unlikely,” and would require, among other things, “coalesc[ing] an entire hardware architecture at the same times as building implementations,” an “entire software ecosystem of operating system, hypervisors, security compilers, tools, debug, etc. must be created,” entire ecosystem “has to make a hard switch from Arm,” and loss of “cross-platform opportunity”); ARM_00094099 at -113 (describing “Arm’s Key Moats”).

⁶⁶ See sources cited *supra* note 65.

⁶⁷ See sources cited *supra* note 65; see also [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

SoCs have different designs and purposes, they serve different sectors. A mobile phone OEM would not treat a data server SoC as a substitute for a mobile phone SoC.⁶⁸

37. The Arm-compliant SoC ecosystem is complex for another reason. Some firms, like Apple, design CPUs and SoCs for its own devices, like the iPhone. Apple, however, does not sell SoCs to OEMs. Other firms, like Samsung, both develop their own chips internally and buy SoCs from suppliers like Qualcomm. Qualcomm and other firms, for example, MediaTek, sell their chips to downstream OEMs. An OEM thus might regard a chip containing an OTS Arm CPU and a Qualcomm chip containing a Qualcomm custom CPU as substitutes or near substitutes.

38. [REDACTED]

39. Until recently, Arm did not produce SoCs, and hence did not sell products that compete with Qualcomm’s SoCs or those of other chip designers.

40. SoC designs are highly complex forms of intellectual property. Firms that produce SoCs must invest significant resources to employ engineers and to develop knowhow over time. Qualcomm began manufacturing chips in the 1990s.⁷¹ Today, the major SoC providers are large firms with significant resources.

41. OEMs buy Arm-compliant SoCs from Qualcomm and Qualcomm’s competitors, and incorporate them into the devices they manufacture and sell to customers. Because different Arm-compliant SoCs are designed for different sectors, they are not generally substitutable across sectors. Thus, there is an Arm-compliant mobile phone sector, an Arm-compliant data server sector, and so on. [REDACTED]

[REDACTED]

42. Generally, unlike hardware, Arm-compliant software does not require a license from Arm. Instead, the Arm ecosystem benefits from the widespread adoption of the Arm ISA

[REDACTED]

⁷¹ Nell Walker, *Qualcomm: A History*, Manufacturing Digital (May 16, 2020), <https://manufacturingdigital.com/technology/qualcomm-history> (last visited Aug. 5, 2025).

⁷² QCVARM_0847188 at -191.

⁷³ QCVARM_1120153 at -160-161.

⁷⁴ *Id.* at -160; *see also id.* at -161 for mobile SoC provider share by revenue.

⁷⁵ *Id.* at 40.

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

to allow developers to design software that functions across Arm-compliant devices. Arm estimates that today “over 22 million developers” are building on Arm. According to Arm, “[o]ne of the benefits of the variety of Arm-based chips is the wide range of commercial and open source software the supports them” and that “many engineers have experience working with Arm-based devices.”⁷⁶ This robust network for Arm-compliant software further entrenches the Arm ISA ecosystem because OEMs who leave the ecosystem, and their customers, will not be able to take advantage of the software offerings of the millions of developers of software that operates on the Arm ISA.

43. The dominance of the Arm ecosystem is hard to overstate. In addition to the 22 million developers, virtually every major technology company is involved in manufacturing Arm-compliant chips, installing those chips in devices or infrastructure, or developing software for those devices. More familiar ecosystems like Apple’s and Android’s are dwarfed by comparison. Indeed, Apple and high-end Android devices use Arm-compliant chips, and so the vast communities of developers for Apple and Android write software that uses Arm’s ISA. Intel’s better-known x86 system, which is still used on most laptops, powers only a fraction of the devices that rely on Arm’s ISA. In 2024, an estimated 29 billion Arm-compliant chips were shipped in various devices, vastly more than the 200 million laptops that were shipped that year.⁷⁷ In the interview in which he discussed those numbers, Arm CEO Rene Haas illustrated Arm’s ubiquity by identifying all the everyday objects that contain Arm-compliant chips—including automobiles, refrigerators, stoves, thermostats, televisions, gaming consoles, smartphones, tablets.⁷⁸ Arm reports that more than 310 billion Arm-based chips have shipped since the 1990s, making Arm’s ecosystem “the largest ecosystem in the semiconductor industry.”⁷⁹ Figure 1 below provides a schematic version of the Arm ecosystem that illustrates the magnitude of its reach.

⁷⁶ See *The Arm Ecosystem: Powering AI Everywhere – From Cloud to Edge*, Arm Newsroom (May 19, 2025), <https://newsroom.arm.com/blog/arm-computex-2025>; *Software ecosystems*, Arm Developer, <https://developer.arm.com/documentation/102252/0100/Software-ecosystems> (last visited August 5, 2025).

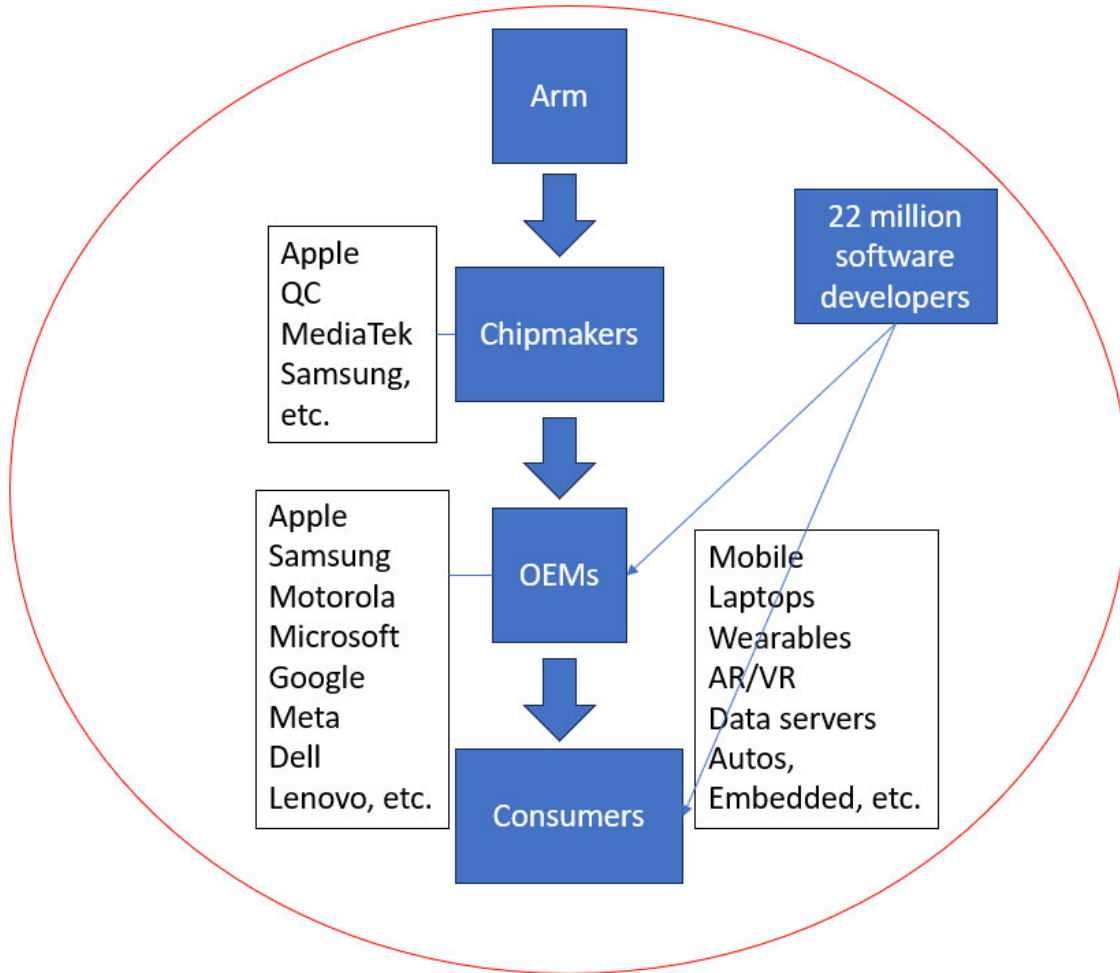
⁷⁷ QCVARM_0716360 at 5-6.

⁷⁸ *Id.* at 4-5.

⁷⁹ ARMQC_00001163 at 4.

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

Figure 1. The Arm Ecosystem



C. Arm’s Recent Conduct Relating to Qualcomm

44. In recent years, Arm has sought to design and sell its own SoCs. For example, it recently finalized a deal to design a data center chip for Meta.⁸⁰ In doing so, Arm has become a competitor or potential competitor of its customers. [REDACTED]

45. In 2024, Arm threatened to cancel Qualcomm’s ALA on the grounds that Qualcomm had breached its obligations under the ALA.⁸² While Arm withdrew the notice letter after an adverse jury verdict, Qualcomm has alleged that Arm has also engaged in other tactics to undermine Qualcomm, going back multiple years. In particular, Qualcomm alleges that Arm has

⁸⁰ ARMQC_02762991; ARMQC_02762992; ARMQC_02763016; QCVARM_1012399; Abbey Tr. at 136:20-25 (“[REDACTED]”); Couillard Tr. at 122:13-126:24; Williamson Tr. at 121:8-17. Arm is also in the process of marketing deals to supply chips directly to other OEMs, including [REDACTED]. See Williamson Tr. at 125:9-22, 128:16-24; see also Haas Tr. at 186:13-198:4.

⁸² SAC ¶¶ 1, 29-31; QCVARM_1030816.

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

withheld deliverables under the Qualcomm ALA, refused to negotiate [REDACTED] an extension to the Qualcomm ALA to cover future version of the architecture, and leaked the notice letter, including to Qualcomm’s customers and competitors. In these and other ways, Arm has interfered with Qualcomm’s relationship with its customers by sowing doubts about Qualcomm’s continued ability to sell Arm-compliant chips.⁸³ Collectively, these tactics appear to be part of an effort to push Qualcomm away from designing and selling custom chips, with the goal of forcing Qualcomm to rely on Arm’s OTS chips or to quit selling SoCs entirely or in particular sectors.

46. The Meta contract may be only the first step in a longer-term plan to enter other SoC sectors. Indeed, that appears to be the vision of Arm’s executives.⁸⁴ As Arm develops experience, know-how, and customer relationships in the data center chip sector, it will likely attempt to enter other chip sectors as well, including the lucrative mobile sectors. Qualcomm, which is a significant competitor in the mobile sector, stands in the way.⁸⁵

V. Relevant Economic Principles

47. Economists have developed a framework for determining whether corporate behavior is anticompetitive. While this framework is frequently used in antitrust cases, the framework itself is based on economics, not law. Below I sketch the relevant economic principles on which I rely in order to evaluate Arm’s conduct vis-à-vis Qualcomm.

A. Competition

48. Competition means rivalry among sellers for the business of buyers.⁸⁶ Competition typically increases with the number of sellers because buyers have more opportunities to switch from one seller to another if the first raises prices. Collusion, coordination, and other forms of anticompetitive conduct also become more difficult to orchestrate as the number of sellers increase. Competition also increases as sellers expand effort to poach buyers from one another, for example, by lowering prices or improving the quality of products. As a general principle, economists favor competition because competition usually results in lower prices and greater output.⁸⁷ When competition prevails, sellers vie for business from buyers by lowering prices to marginal cost. Anticompetitive behavior refers to behavior by a firm to reduce competition.

⁸³ SAC ¶¶ 29-37; *see also, e.g.*, ARM_01241585; QCARM_7484477; ARM_01241565; ARM_01241577; QCARM_7484481; QCARM_7477120; QCARM_7484471; ARM_01241285; QCARM_7509431; QCVARM_0857152; ARMQC_02778180; ARMQC_02771126; QCVARM_1120481; QCVARM_1119108; ARM_00110511; ARM_01215564; ARM_01215886; ARM_00079520; ARM_00079530; ARM_00082009; ARM_00094197; ARM_00094200; ARM_00094204; ARM_01215888; ARM_01215889; ARM_01215486; ARM_01231038; ARM_01215885; ARM_00110513; ARM_01215887; QCVARM_0847094.

⁸⁴ Michael Acton, *Arm to explore designing its own chips, CEO says*, Financial Times (July 30, 2025), <https://www.ft.com/content/735c8a2d-0ce0-49d6-934f-8ace3e927108>.

⁸⁵ QCVARM_1120153 at 12-14.

⁸⁶ *See* John Vickers, *Concepts of Competition*, 47 Oxford Economic Papers 1, 3 (1995).

⁸⁷ *Id.* at 4-7.

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

49. Firms that compete with each other for customers do so by offering similar goods and services. When goods are identical, they are referred to as “substitutes,” and firms that sell substitutes can obtain a competitive advantage only by offering lower prices. Many goods are similar but not identical; they can be called “near substitutes.” Firms may compete with each other by offering near substitutes that have somewhat different prices and/or characteristics. This process is known as “differentiation.” Differentiation of products takes place as firms compete with one another by innovating, improving the quality of products, and varying the characteristics of products so as to attract customers from the firms’ rivals. Generally speaking, when products are closer substitutes, competition is more intense; but competition can exist even when products are near substitutes because some customers may be indifferent between near substitutes despite their different attributes or qualities. A characteristic way of identifying a monopolist is to determinate that it is the only firm (or a large firm with only a few small competitors) that sells a product for which there are no substitutes or no or few near substitutes. Such a firm has monopoly power, meaning the ability to profitably charge prices above marginal cost.

B. Input Foreclosure

50. Input foreclosure is a kind of anticompetitive behavior that takes place when a firm has both a “vertical” (buyer-seller) relationship and a competitive relationship with the counterparty. Input foreclosure may be defined as a dominant firm’s denial of access to a critical input that another firm needs to buy in order to sustain its business, with the intent or effect of achieving monopoly power in that downstream sector.⁸⁸ In a common scenario, Firm A sells goods or services (“inputs”) downstream to a group of buyers. Firm A faces no or little competition so it can set the price above marginal cost. Buyers must pay this higher price because the input is critical to their business and they cannot turn to another supplier. Firm A can raise the production costs of downstream buyers by raising the price of the inputs, reducing their quality, or cutting off (or reducing) the supply of inputs. Firm A thus can be thought of as a bottleneck from the standpoint of customers.

51. Rather than charge buyers the same monopoly price, Firm A may be able to increase its profits by discriminating against certain downstream firms and favoring other downstream firms with the goal of driving the first group out of business. Facing no competition from the disfavored firms, the favored firms can increase the prices they charge their own buyers, as those buyers will no longer be able to buy from the disfavored firms. In some settings, Firm A might demand a cut of the monopoly profits of the favored downstream firms. In other settings, Firm A might actually own the downstream firm—that is, the upstream seller and the downstream buyer are two divisions of the same Firm A. Firm A might have acquired the downstream firm through a vertical acquisition or expanded downstream unilaterally.⁸⁹

⁸⁸ See Patrick Rey & Jean Tirole, *A Primer on Foreclosure*, 3 Handbook of Industrial Organization 2147, 2148 (2007). Some scholars use the term “foreclosure” to refer only to complete denial of access to inputs. Other terms, including “raising rivals’ costs,” may be used to refer to the practice of raising the price or reducing the quality of inputs. I will refer to both types of activity as foreclosure, and will distinguish the latter where context requires as “partial foreclosure.”

⁸⁹ The economic literature on vertical foreclosure is very large. At one time, it was frequently asserted that vertical integration by a monopolist rarely causes harm. But that view has been decisively rebutted by a wave of literature

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

52. In the latter case, where Firm A both controls the upstream input and does business downstream in competition with other downstream firms, Firm A may have an incentive to disadvantage the downstream firms as described above. In some cases, Firm A might engage in such burdensome discrimination (for example, higher prices, lower quality, worse service) that the downstream firms will be completely foreclosed, leaving Firm A with a dominant position both downstream and upstream. But input foreclosure can cause anticompetitive harm even if the downstream firms are not foreclosed entirely. Firm A might choose to raise prices or reduce quality sufficiently to give its downstream division a competitive advantage over the other firms, but not so much as to drive those firms out of business. Partial foreclosure of this type may be more profitable than complete foreclosure because some of the downstream firms have competitive advantages that Firm A’s downstream division cannot defeat in the short term—for example, the ability to manufacture end products that are preferred by niche customers. In such a case, differentiation exists: some customers prefer the product even if its price is higher than Firm A’s downstream product because they benefit from the distinguishing characteristics of that product. But the outcome is still anticompetitive. Firm A benefits in two ways: It continues to receive royalties from the remaining downstream firms; and, facing less downstream competition, Firm A can charge higher prices to all other downstream customers.

53. Economists have developed a standard framework for determining whether input foreclosure is anticompetitive. First, one determines whether the firm in question has the ability to raise prices for or otherwise harm the downstream buyers. Second, one determines whether the firm has an incentive to raise prices for the downstream buyers. The firm has an incentive to raise prices if it gains more by obtaining the business of the crowded-out downstream buyers than it loses from the loss of downstream buyers’ purchases of inputs from the firm. If the answer to both questions is yes, then the firm’s behavior is likely anticompetitive, though the anticompetitive impact may be mitigated if vertical integration produces efficiencies. This mode of analysis is typically called the ability/incentive framework.⁹⁰

54. Upstream monopolists can cause other types of anticompetitive harm. For example, when a monopolist displaces downstream competition, it can reduce the risk it faces that a downstream firm will integrate upstream. Vertical integration thus may not only result in a downstream reduction in competition. It may also result in greater protection of the upstream monopolist from upstream competition.⁹¹ And where an upstream monopolist obtains a downstream monopoly, it may raise entry barriers at both levels of the supply chain. Since the upstream division can refuse to sell to a downstream entrant, and the downstream division can refuse to buy from an upstream entrant, firms that seek to enter either market must enter both—which will be riskier and more expensive. Finally, an integrated firm with monopoly power in one or more of the two markets may abuse its access to information that it obtains from counterparties so as to improve its market power and save costs.⁹² If this behavior takes place,

reaching back decades. See, e.g., Oliver Hart et al., *Vertical Integration and Market Foreclosure*, 1990 Brookings Papers on Economic Activity: Microeconomics, 205–285 (1990); Janusz A. Ordover et al., *Equilibrium Vertical Foreclosure*, 80 American Economic Review, 127–142 (1990). Rey & Tirole, *supra* n. 88.

⁹⁰ Shapiro, *supra* n. 50.

⁹¹ Chiara Fumagalli & Massimo Motta, *Dynamic Vertical Foreclosure*, 63 J. of L. and Econ. 763-812 (2020).

⁹² See Marie-Laure Allain et al., *Vertical Integration as a Source of Hold-up*, Toulouse School of Economics, Working Paper n. 14-525 (2014).

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

then firms will be reluctant to enter and compete in the market, resulting in higher prices and less innovation.

VI. Economic Analysis of Arm’s Conduct

A. Arm’s Dominance of the ISA Technology

55. Arm dominates the Arm ISA ecosystem through its control of the Arm ISA technology. Arm alone controls access to design, manufacture and sale of Arm-compliant hardware. It grants access by issuing licenses, which either permit licensees to design and sell custom CPUs or permit licensees to use Arm’s OTS hardware in Arm-based SoCs. Firms that produce Arm-compliant SoCs and cores under one of the Arm licenses cannot substitute to non-Arm ISA licenses if Arm raises the price of its licenses substantially above marginal cost.⁹³ If, for example, Qualcomm lost its licenses with Arm, Arm would likely litigate to prevent Qualcomm from selling Arm-based chips. Customers may refuse to buy chips from Qualcomm if Qualcomm built on another ISA because Qualcomm’s new chips would no longer be Arm-compliant and compatible with other devices and software in the Arm ecosystem. Arm-based software developed by the robust network of “over 22 million developers,” would not run on non-Arm-compliant chips. Rather than lose its business, Qualcomm would pay a higher price to Arm.

56. Arm’s dominance developed out of its open and neutral licensing policy, which encouraged widespread adoption. As a result of that widespread adoption, Arm is now entrenched. Licensees are not willing to give up Arm licenses because if they did, then they would not be able to sell Arm-compliant products across the ecosystem. The Arm ecosystem includes both the hardware producers who design and sell Arm-compliant cores and SoCs and millions of developers working on software for the Arm ecosystem.

57. Arm’s ecosystem is protected by entry barriers. Because so many companies specialize in Arm-compliant products, a firm that sought to develop a new ISA would have to not only produce a superior ISA. It would also have to persuade firms in the Arm ecosystem to give up their existing customers and develop products for a not-yet-existing set of customers. Existing ISAs, like Intel’s x86, are not as well suited to the sectors that are dominated by the Arm ISA, such as mobile which benefits from the Arm ISA’s power-efficient qualities. [REDACTED]

[REDACTED]

[REDACTED]

⁹³ ARMQC_02727610 at -617 (As explained by Arm, “[e]verything has to be able to run everywhere” and a “strong eco-system of users is vital.” Thus, “Arm’s success has come from the wide accessibility of its architecture” and Arm’s “fostering of an enormous ecosystem of developers.”); [REDACTED]

⁹⁴ Conversation with Durga Malladi, Qualcomm’s Senior VP & GM of Technology Planning, Edge Solutions & Data Center.

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

58. Arm’s dominance is widely recognized by the industry.⁹⁵ Arm itself says that “99% of all smartphones [are] powered by Arm.”⁹⁶ Arm’s ISA has no rivals at all in the Arm ecosystem for the simple reason that Arm demands that a license is necessary to design and sell Arm-compliant SoCs or cores. Arm’s behavior also exhibits characteristics of a monopolist. For example, Arm has increased royalty rates under the TLA in a way that does not appear to be based on the underlying costs of maintaining the Arm ecosystem,⁹⁷ [REDACTED] [REDACTED] To be sure, in some sectors, like data centers and compute, OEMs can still choose between using Intel chips under the x86 ISA and Arm-compliant chips. But the Arm ISA is rapidly gaining share in some of those sectors, including data centers.⁹⁹

B. Qualcomm’s Role in Arm-Compliant Hardware

59. Qualcomm designs Arm-compliant SoCs that are used in various technology sectors. In designing the SoCs, it uses its own custom core designs under the ALA, Arm’s OTS cores and other IP under the TLA, and Qualcomm’s proprietary intellectual property. Fabrication is outsourced. Qualcomm sells the SoCs to OEMs.

60. Qualcomm’s SoCs are designed for specific technology sectors, including mobile, compute, wearables, AR/VR, and data servers. [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

⁹⁵ [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

⁹⁶ *Id.*, see also Arm, Consumer Technologies: Smartphones, <https://www.arm.com/markets/consumer-technologies/smartphones> (last visited Aug. 5, 2025); ARMQC_00001038 at -067.

⁹⁸ QCVARM_1018853; [REDACTED]
[REDACTED]
[REDACTED]

⁹⁹ [REDACTED] Conversation with Durga Malladi, Qualcomm’s Senior VP & GM of Technology Planning, Edge Solutions & Data Center; Mike Johnson, *Arm Holdings CEO Predicts 50% Data Center CPU Market Share by 2025*, WebProNews (July 31, 2025), <https://www.webpronews.com/arm-holdings-ceo-predicts-50-data-center-cpu-market-share-by-2025/>; see also Mohamed Awad, *Half of the Compute Shipped to Top Hyperscalers in 2025 will be Arm-based*, Arm Newsroom (April 1, 2025), <https://newsroom.arm.com/blog/half-of-compute-shipped-to-top-hyperscalers-in-2025-will-be-arm-based>.

¹⁰² QCVARM_1120153 at 40.

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

63. Qualcomm is one of Arm’s largest customers. It paid 10% of Arm’s revenues in the fiscal year ending in 2024.¹¹³

C. Arm’s Strategy of Input Foreclosure

64. Arm has taken steps to design and sell its own SoCs. For illustrative purposes, I focus on the data center sector, though Arm’s intentions to sell SoCs extend beyond the data center sector. Arm has already entered into a contract to supply data center chips for Meta, beginning this year.¹¹⁴ [REDACTED]

According to Arm, it currently has a [REDACTED]

[REDACTED]¹¹⁶ At the same time, Arm has taken steps to undermine Qualcomm’s position in the broader SoC ecosystem as well as the data center-specific SoC sector. Arm both has the ability and appears to have the incentive to foreclose Qualcomm and other firms from all sectors, particularly the data center-specific SoC sector.

1) Ability

65. Arm has the ability to foreclose Qualcomm from the Arm-compliant data center-specific SoC sector as well as other sectors. The reason is that these sectors are part of the Arm ecosystem, and Arm’s control over its ecosystem allows it to discriminate against firms that participate in the ecosystem despite Arm’s earlier promises to keep the system open. Firms can survive in the Arm ecosystem, or in Arm-compliant sectors only as long as they are able to make Arm-compliant products under one of Arm’s licenses. Arm’s ability to degrade firms’ access to the Arm ISA has been demonstrated by Arm’s actions against Qualcomm. There is evidence of several such actions.

- *Failure to provide Qualcomm with certain deliverables in violation of the ALA.* Arm failed to provide certain technology related to verifying compliance with the Arm ISA.¹¹⁷ Arm withheld sets of reference reports, known as the “OOB,” providing the specific compliance tests needed by Qualcomm to verify compliance, as well as information on expected test failures that are also used in the verification process.¹¹⁸ Arm has also withheld replacement tests, known as “ACK patches,” that fix defective tests used in the compliance testing process.¹¹⁹ Arm’s failure to provide deliverables, even if remedied, shows that Arm is committed to finding ways of

¹¹³ ARMQC_00000640 at -646 (ARM Holdings plc, Annual Report for Fiscal Year Ended Mar. 31, 2024).

¹¹⁴ QCVARM_1012399; ARMQC_02762992.

¹¹⁶ ARMQC_02739661 at -666.

¹¹⁷ See, e.g., SAC ¶¶ 78-80, see also ¶¶ 81-101; ARM_01241585; QCARM_7484477; ARM_01241565; ARM_01241577; QCARM_7484481; QCARM_7477120; QCARM_7484471; ARM_01241285.

¹¹⁸ *Id.*, see also, [REDACTED]

¹¹⁹ *Id.*

underperforming its contract, and in so doing degrading Qualcomm's ability to commercialize Arm-compliant products. Finally, Arm's failure to cure and related actions indicate that Arm may be acting in bad faith.

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

messages to customers of Arm and Qualcomm that suggested that they faced legal jeopardy if they used Qualcomm products.¹²⁶

- *Reduction in general support.* Because Arm and its licensees all benefit from a vibrant ecosystem, Arm has traditionally arranged various forms of support, including meetings during which employees of Arm and its licensees exchange ideas. Arm has in recent years disinvented Qualcomm employees from these meetings.¹²⁷

66. These actions have demonstrated that Arm has the ability to foreclose. Arm is pivoting from its open, neutral model—where it treats its customers in a nondiscriminatory manner, benefits from attracting as many licensees as possible, and therefore provides adequate support to its licensees—to a different model, one in which it forecloses customers in sectors that Arm seeks to enter.

2) Incentive

67. Arm has an incentive to engage in input foreclosure in sectors where the potential long-term gains from taking business from licensees exceed the short-term loss of royalties on the products that the licensees no longer sell.

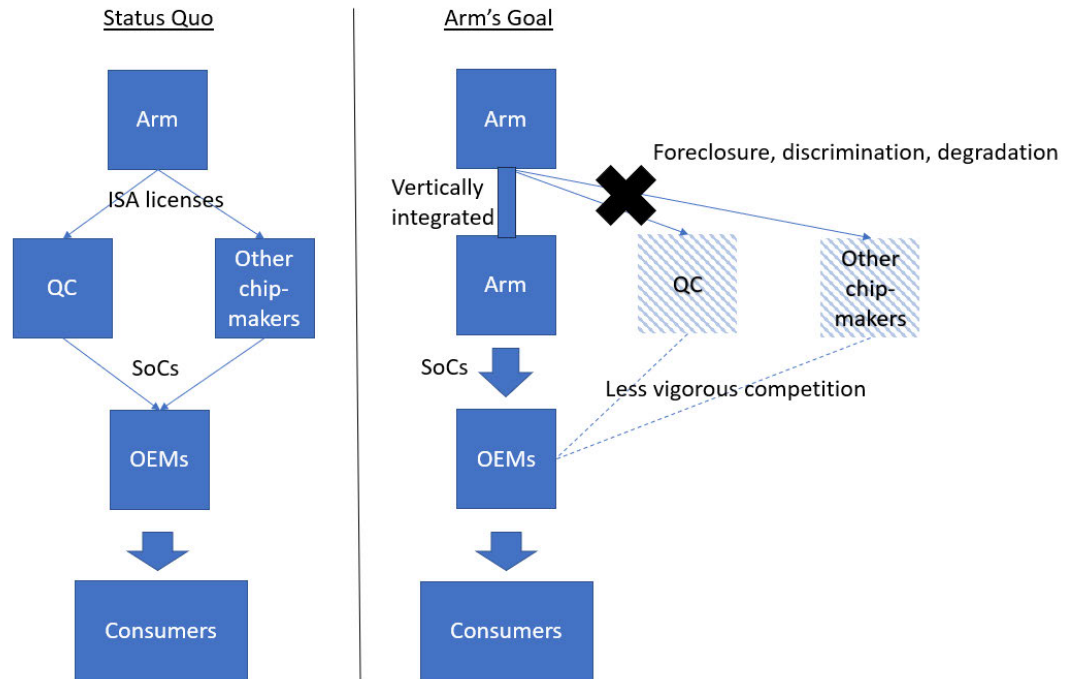
68. Figure 2 provides a simplified diagram of Arm’s and Qualcomm’s position in the ecosystem under Arm’s earlier model of being a neutral sponsor of its ISA (left panel), and of Arm’s apparent goal of entering the downstream chip design and manufacture level of the supply chain (right panel). As is immediately apparent, Arm’s entry converts it into Qualcomm’s competitor in high-tier chip design and manufacture. Arm is now both supplier and competitor: Qualcomm must both depend on Arm for an essential input—the ISA license and support—and compete with Arm to produce the best chips. Arm’s incentive is no longer to sell as many licenses as possible, as it was when it could make money from Qualcomm only from license fees and royalties. It will balance the gains from selling an additional license against the gains from eliminating competition downstream.

¹²⁶ *Id.* see also QCVARM 0847094; December 12, 2023 Haas Tr. at 237:24-238:5; December 16, 2024 *Arm Ltd. v. Qualcomm, Inc.* CA No. 22-1146 Trial Tr. at 328:15-329:22 (Cross examination of Rene Haas).

¹²⁷ [REDACTED]

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

Figure 2. Input Foreclosure

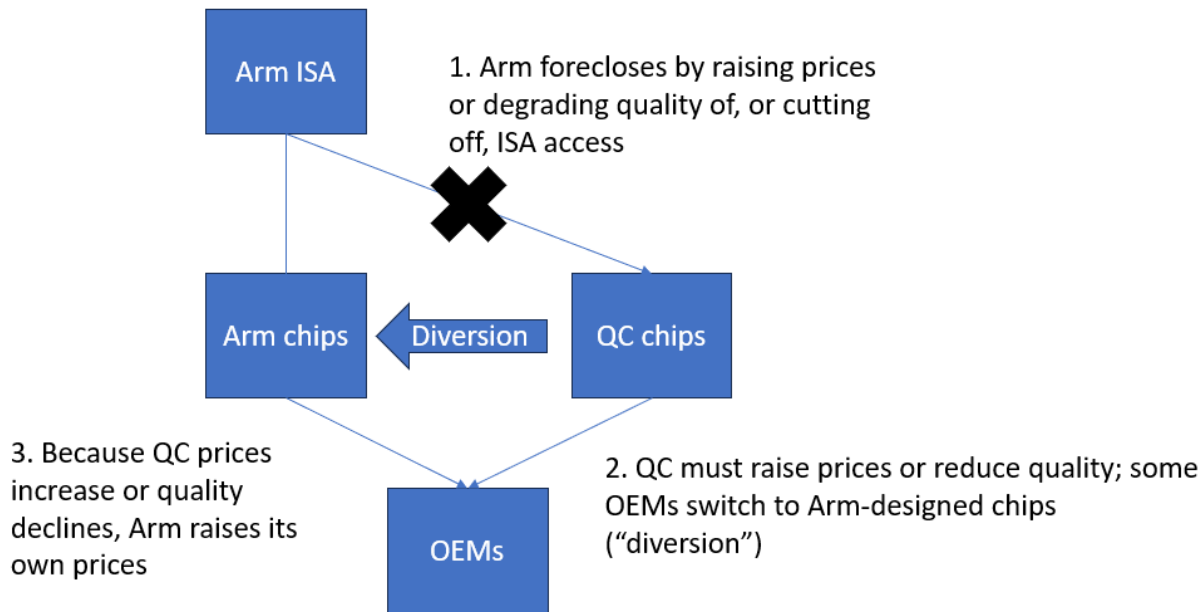


69. For illustrative purposes, I focus on the data center sector. Arm supplies an essential input to chipmakers in the form of Arm ISA licenses. Arm earns an upstream margin on those licenses roughly equal to the royalty rate that licensees pay. Qualcomm is one such licensee, and it in turn earns (or will earn) a downstream margin on sales of Arm-compliant data center chips to data centers. Arm enters the data center chip sector—in effect, licensing itself to manufacture Arm-compliant chips—and competes with Qualcomm. Arm earns a downstream margin, based on the royalties it earns from OEMs [REDACTED].

70. If Arm is able to cut off technology supply for Qualcomm completely, then Arm loses its upstream margins on the Qualcomm license. However, Arm would gain downstream sales and the downstream margins that they produce, assuming that Arm is a viable competitor in the downstream market either through organic entry or through acquisitions. Figure 3 illustrates these dynamics. By degrading Qualcomm’s access to the ISA and related technology (1), Arm forces Qualcomm to raise prices or reduce quality of chips it sells to OEMs. OEMs respond by shifting some of their supply to Arm in a process economists call “diversion.” Arm gains revenues from diversion even as it potentially loses revenues as Qualcomm pays less in royalties on fewer sales (2). Because of Qualcomm’s weaker competitive position, Arm can also raise prices or reduce quality in sales to OEMs (3).

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

Figure 3. Diversion



71.

Even if Qualcomm’s sales are not diverted to Arm, but to other competitors using OTS cores, Arm will still make more upstream margin from licensing to those other competitors than from licensing to Qualcomm under the ALA. Further, if Arm is a viable competitor downstream and is able to capture even some small portion of diverted sales from Qualcomm, that creates additional incentive to foreclose Qualcomm. This is because downstream margins on chip sales to data centers are likely to be higher than upstream margins for licensing. The more of Qualcomm’s potential share that Arm can capture after foreclosing Qualcomm, the stronger its incentive to foreclose Qualcomm.

72. It is possible that Arm would maximize profits by completely destroying Qualcomm’s business opportunities in certain sectors even though it would suffer a short-term loss of royalties. If Arm had been able to follow through on its threat to cancel the ALA, that is what would have happened. But even if Arm does not succeed in foreclosing Qualcomm entirely, Arm would still benefit from partially foreclosing Qualcomm in certain sectors. For example, if Qualcomm has special relationships with some of its customers, a good reputation in a sector, niche abilities, and other advantages, Arm might continue to benefit from Qualcomm as a chip supplier of Arm-compliant chips for certain sectors for the time being while displacing

¹²⁸ARMQC_02727610 at -619 (); QCARM_0343120 at -139; QCARM_0338573 at -576 (Over a 15-year term under the Qualcomm ALA Annexes for the v8 and v8 Next architectures, Qualcomm agreed to pay);

Grisenthwaite Tr. at 26:20-30:21. The industry view appears to be the same. See ARM_01424394 at -395 (“All else being equal, TLAs are more expensive with higher royalty rates than ALAs as TLAs offer greater value add and relieve the chip design companies of significant design work”).

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

Qualcomm in other sectors. In that way, Arm continues to benefit from royalties in some sectors while taking over other sectors by degrading Qualcomm’s ability to compete in those sectors. Whichever the case, the downstream OEMs will either pay more for chips or be required to settle for lower-quality chips, to the detriment of the ultimate consumer.

73. Other factors highlight the anticompetitive risk of Arm’s conduct.

74. First, Arm has a strong incentive to foreclose Qualcomm from selling custom cores under the ALA because Qualcomm will both be forced to switch to higher-royalty OTS cores and will lose downstream SoC business to Arm.¹²⁹ Arm thus gains in two ways—through higher upstream TLA royalties from Qualcomm (for example, from the sale of undifferentiated SoCs that incorporate the OTS cores) and higher downstream chip sales at the expense of Qualcomm (as Arm captures diverted sales in the higher-tier SoC business).

75. Second, where the downstream portion of the ecosystem is already concentrated (e.g., mobile), input foreclosure would likely give Arm substantial downstream power, enabling it to raise prices both unilaterally and potentially through coordination or collusion with any remaining downstream competitors.

76. Third, Arm’s input foreclosure is likely to reduce entry to the chip design and manufacture ecosystem. Entry is possible only if Arm grants licenses to the firms and refrains from degrading support to firms that already have licenses. Arm would have no reason to do so because that behavior would reduce its power in the lucrative downstream portion of the ISA ecosystem. This will ultimately prevent other firms from being able to compete away Arm’s downstream margin.

77. Fourth, foreclosure of the Arm ISA may impede innovation. [REDACTED]

[REDACTED]
Moreover, if Arm’s chips were superior, then Arm would not need to undermine Qualcomm’s access to the ISA. Fair competition allows one firm to prevail over another through innovation—and thus encourages innovation.

78. Fifth, if Arm substantially weakens Qualcomm’s ability to participate in Arm’s ecosystem, as it tried to do by terminating Qualcomm’s ALA, then it may raise upstream barriers

¹²⁹ If Arm keeps its most advanced cores to itself and only uses them in its own SoCs rather than supply them to TLA licensees, the only SoC supplier that can differentiate is Arm.

¹³⁰ See e.g., [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

of entry against upstarts like RISC-V.¹³¹ RISC-V is a threat to Arm’s dominance, as Arm is well aware.¹³² According to James Ashton’s book, *The Everything Blueprint*, Arm has attempted to spread “fear, uncertainty, and doubt” about RISC-V.¹³³ Among other things, Arm launched a website with the web address “riscv-basics.com,” which was “designed to plant seeds of doubt in the minds of developers who might use RISC-V as their processor architecture instead of Arm.”¹³⁴ [REDACTED]

[REDACTED] Moreover, other licensees will have an incentive to reduce their investment in the Arm ecosystem as they see Arm abuse its own licensees. While the firms might manage to migrate to RISC-V in the long term, in the short term there will be disruption and loss of innovation.

79. Some economists believe that input foreclosure is justified if the dominant firm charges lower prices to the customers that it obtains from the foreclosed firm.¹³⁶ This is a controversial view, as it would justify the monopolization of downstream markets, which is anticompetitive behavior regardless of the impact on prices, not to mention the harm to innovation and quality. And if Arm dominates the downstream portion of the ecosystem as well as the ISA itself, entry will be extremely difficult.

D. Arm’s Violations of Its Neutrality

80. From its founding, Arm branded itself the “Switzerland of chips” by committing itself to license the Arm ISA to companies on an “open, neutral” basis.¹³⁷ Arm believed that it could establish the ARM ISA as a global standard through a model of open licensing. Arm “introduced the IP business model, which was not common at the time. This meant the Arm processor was available to be licensed to many different companies for an upfront license fee and

¹³¹ Chiara Fumagalli & Massimo Motta, *Dynamic Vertical Foreclosure*, 63 J. of L. and Econ. 763–812 (2020)..

¹³² See QCVARM_1066820 at -164-165 (describing Arm’s efforts to spread “fear, uncertainty, and doubt” about RISC-V).

¹³³ See QCVARM_1066820 at 164-165 (describing Arm’s efforts to spread “fear, uncertainty, and doubt” about RISC-V).

¹³⁴ *Id.*

¹³⁵ RISC-V, *Members*, <https://riscv.org/members/> (last visited August 5, 2025); Conversation with Durga Malladi, Qualcomm’s Senior VP & GM of Technology Planning, Edge Solutions & Data Center.

¹³⁶ See, e.g., Shapiro, *supra* n. 50.

¹³⁷ FTC Compl. ¶¶ 22-29; see also Josh Horwitz, *Relief and Challenges for Chipmakers as Nvidia-Arm Megadeal Collapses*, Reuters (Feb. 8, 2022, 8:21 AM), <https://www.reuters.com/markets/us/relief-challenges-chipmakers-nvidia-arm-megadeal-collapses-2022-02-08/> (quoting Arm co-founder Hermann Hauser as stating that “[t]he whole point about Arm was always that it was the Switzerland of the semiconductor industry, dealing very even-handedly with all of its 500-plus licensees”); [REDACTED]

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

then royalties based on the amount of silicon produced.”¹³⁸ Sir Ron Saxby, a former Arm CEO explained: “We also bet everything on assembling a worldwide customer base, creating a global standard with companies who traditionally competed with each other, molding them into a partnership, pulling in the same direction, and united around one architecture that evolved over time. This unique combination made us into a force much larger than the sum of the parts.”¹³⁹ Likewise, Hermann Hauser the co-founder of Arm stated: “The whole point about Arm was always that it was the Switzerland of the semiconductor industry, dealing very even-handedly with all of its 500-plus licensees. That wasn’t lost on the regulators in the UK, the U.S., EU and China.”¹⁴⁰

81. As recently explained by Arm’s former Vice President for External Communications:¹⁴¹

So yes, we often -- that phrase, you know, We are a neutral player, we are the Switzerland semiconductors, often was something that the company spokespeople would -- would regularly repeat. It wasn't a new thing. Licensing technology to anyone who wanted to pay for it.

...

Q. The -- you say that that phrase, "neutral player," and "Switzerland of semiconductors" was something you were familiar with and the company spokespersons use. Was that throughout your time --

A. Yes.

Q. -- at Arm?

A. Yes.

Q. Okay. And when you refer to "company spokesmen" in that context, that would include external communications?

A. Yes.

...

Q. Okay. And when you say, "company spokesmen," using that phrase, "Switzerland of semiconductors" or "neutral player," are you referring to any company spokesperson, generally, categories of spokespeople other than external communications?

¹³⁸ Arm.com, *The Official History of Arm*, <https://newsroom.arm.com/blog/arm-official-history> (last visited August 8, 2025).

¹³⁹ Mobile Unleashed, *The Origin and Evolution of ARM Processors In Our Devices*, (December 2015) semiwiki.com/books/Mobile%20Unleashed%20-%20front%20to%20back.pdf, at vii.

¹⁴⁰ Josh Horwitz, *Relief and Challenges for Chipmakers as Nvidia-Arm Megadeal Collapses*, Reuters (Feb. 8, 2022, 8:21 AM), <https://www.reuters.com/markets/us/relief-challenges-chipmakers-nvidia-arm-megadeal-collapses-2022-02-08/>.

¹⁴¹ Hughes Tr. at 78:23-81:3.

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

A. That would be -- again, in my role, I heard that phrase often repeated by company spokespeople or executives in press interviews.

Q. Okay. And you would have heard that from high-level executives of Arm in press interviews; is that right?

A. Of course, over the years. I mean, again, from when I started in 2013, that was a phrase that was often repeated. I don't know exactly who, when, but it was often repeated.

82. This commitment meant that Arm would allow its licensees to rely on the Arm ISA as they expanded into new sectors of the semiconductor industry without worrying that Arm would ultimately withdraw support or enter those same sectors as a competitor.¹⁴² Arm apparently believed that this strategy served its own interests as well as those of its licensees, as it would ensure that the Arm ISA would prevail over competing ISAs that might be developed by other technology firms.¹⁴³

83. The industry responded favorably to Arm’s novel business model. And as more and more firms joined the Arm ecosystem, network effects kicked in. The Arm ecosystem became more valuable and then essential for a large portion of the semiconductor industry.¹⁴⁴ Today, having spent decades investing in an ecosystem of software and hardware surrounding the Arm ISA, industry members are effectively “locked-in” to the Arm ISA, thereby putting Arm in a position to “hold-up” participants needing its ISA.

84. Arm, meanwhile, benefited from the fees and royalties it received from its licensees who, by successfully penetrating new sectors of the semiconductor industry, carried the Arm ISA with them. The licensees establish the dominance of the Arm ISA as they attracted more and more software developers to produce software that ran on Arm-based chips, who in turn attracted to Arm’s ISA more hardware manufacturers whose devices could run on that software.

85. Arm’s revenues increased as it gained more licensees and those licensees sold more chips and paid more royalties. But despite the increasing demand for Arm ISA licenses,

¹⁴² Conversation with Gerard Williams, Qualcomm Senior VP Engineering; *see also* Arm, *The Official History of Arm* (August 16, 2023), newsroom.arm.com/blog/arm-official-history (“In 1993, the Apple Newton was launched on the Arm architecture. However, the product was not a commercial success, which led to Saxby realizing that Arm as a company could not be sustained on single products. He introduced the IP business model, which was not common at the time. This meant the Arm processor was available to be licensed to many different companies for an upfront license fee and then royalties based on the amount of silicon produced.”).

¹⁴³ *See* Mobile Unleashed, *The Origin and Evolution of ARM Processors In Our Devices*, (December 2015) semiwiki.com/books/Mobile%20Unleashed%20-%20front%20to%20back.pdf, at vii (Arm “bet everything on assembling a worldwide customer base, creating a global standard with companies who traditionally competed with each other, molding them into a partnership, pulling in the same direction, and united around one architecture that evolved over time.”); Rene Haas in ACQ2 by Acquired Podcast, *How Arm became the worlds default chip architecture with ARM CEO Rene Haas* (December 2, 2024), https://open.spotify.com/episode/2sxLw7ti6tC7xr3NQnphXG?si=KMdhxFHlQMgtGupg_c6kja&nd=1&dlsi=ba9cf1c344524296, at 50:00 (According to Arm’s CEO, one of the things in Arm’s “favor” is that Arm “has an open model, that [Arm’s] products can be built by any fab, by any company.”).

¹⁴⁴ Conversation with Gerard Williams, Qualcomm Senior VP Engineering.

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

Arm could not push up royalty rates. As related in James Ashton’s book, *The Everything Blueprint*:

The question of why Arm did not push up its royalty rates was not a new one. Quizzed on the subject around the time he became chief executive in 2013, [then-CEO Simon] Segars responded: “We could do that and we could probably enjoy some more revenue for some time, but our customers would go off and do something else or have less healthy businesses. If we tried to extract lots of money out of the ecosystem, we’d have less companies supporting the Arm architecture and that would limit where it could go.”¹⁴⁵

86. That appears to be no longer true today. More than a decade later, Arm’s ISA has reached such a level of dominance that licensees can no longer easily walk away. Now Arm seeks not only to raise royalty rates, but to design and manufacture SoCs, in a “dramatic departure from its traditional business model.”¹⁴⁶ Its behavior has alarmed Qualcomm because Qualcomm will be required to compete with the supplier of a vital input—the licenses that allow Qualcomm to manufacture Arm-compliant chips.

87. Arm has already threatened to terminate Qualcomm’s ALA, reversing its longstanding business model as the “Switzerland of chips,” so that it can both increase the royalty rate, as it has done for the TLA, and take Qualcomm’s SoC business.¹⁴⁷ Having failed to persuade a court or jury that Qualcomm’s CPU products were not covered by its ALA, Arm has adopted the indirect strategy of driving Qualcomm out of business and taking its margins. As customers flee Qualcomm to Arm, Arm will lose money in foregone royalties in the short term. But, Arm hopes to obtain larger margins in the long term as it takes over Qualcomm’s business or Qualcomm is pushed to increasingly make use of Arm’s OTS cores.

88. Arm’s CEO, Rene Haas, has recently confirmed that Arm no longer wishes to keep its prior commitments and instead plans to cut off ALA licensees and sell SoCs directly to OEMs, such as data centers, automobile companies, and mobile phone manufacturers. Rene Haas said that Arm’s interest in whether to accept a prospective customer depends on “whether your business is a chip business [such as Qualcomm] or a product business.”¹⁴⁸

89. Arm’s conduct portends significant competitive harm to the semiconductor industry that has so heavily relied on Arm’s original open business model. As the FTC explained in opposing Arm’s merger with Nvidia, competition between Arm and its licensees would result in “a critical loss of trust in Arm by its own licensees” who will be “less likely to share competitive sensitive information with Arm” because Nvidia would be able to use this information for its chip design.¹⁴⁹

¹⁴⁵ QCVARM_1066820 at -6942, -7154.

¹⁴⁶ Financial Times, *How Arm could be the unexpected winner of the AI investment boom* (October 30, 2024), www.ft.com/content/80a1e79e-b662-40e9-9b41-6d1070f694a8?FTCamp=engage/CAPi/website/Channel_muckrack//B2B.

¹⁴⁷ QCVARM_1030816; QCVARM_0847094.

¹⁴⁸ Bloomberg Technology, *Arm CEO on Intel, Chips, AI, Listing in US* (October 22, 2024), www.youtube.com/watch?v=6FnBz8rxWUY, at 15:20-16:00.

¹⁴⁹ FTC Compl. ¶ 10, as discussed *supra*, ¶ 30.

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

90. As the industry observes Arm’s mistreatment of Qualcomm, firms will become less willing to invest in the Arm ecosystem. Their incentives to invest are reduced because the more successful they are at designing Arm-compliant chips, the more likely that Arm will try to take their business away from them. Arm will have a greater incentive to enter those sectors by degrading the licensees’ access to the Arm technology while producing its own chips for those sectors. Rather than invest in new Arm-compliant products, firms will look for ways to escape the Arm ecosystem, for example, by collaboratively or unilaterally developing an alternative ISA. The early development of the open-source ISA, RISC-V, may reflect this concern. But in the meantime, Arm’s licensees will become “less healthy,” to use Mr. Ashton’s term, as they cut back on sharing information with and cooperating with Arm. Arm’s ISA will degrade in the short term, while a shift to another ISA ecosystem in the longer term will require massive new investment and delay further development of high-quality chips at a time of significant public concern about America’s competitiveness in the technology industry.

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

I declare under penalty of perjury that the foregoing is true and correct.

Eric A. Posner

8/8/2025

Executed on

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

Annex 1. Consulting Engagements Since 2020

- Stephens v. American Arbitration Association (2025). Advised defendant on antitrust litigation.
- In re Broadcom (2025). Submitted report on anticompetitive behavior of employer relating to its employees. Retained by Seppinni Law, counsel for plaintiff employees.
- Sona Asset Management (2025). Advised financial institution about legal issues relating to challenges to tariffs.
- Le v. Zuffa (2024). Provided expert report supporting a proposal to settle a lawsuit brought by employees of mixed martial arts league against their employer. Retained by Berger Montague, attorney for plaintiffs.
- Department of Justice (2024). Advised on investigation of a potential merger between two entertainment-related entities. The facts are confidential.
- Sona Asset Management (2024). Advised financial institution about legal issues in Tapestry/Capri merger litigation.
- Ford Motor Co. (2021-2022). Advised automobile manufacture on antitrust strategy relating to distribution.
- Difederico v Amazon.com, Inc. et al., No. T-445-20 (Federal Court, Canada) (2021). Advised on arbitration issues relating to class action lawsuit against Amazon in Canada. Served as expert; retained by Orr Taylor LLP and Strosberg Sasso Sutts LLP.
- Latham & Watkins (2020). Advised law firm on draft commercial code for proposed foreign development zone in middle east.

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

Annex 2. Curriculum Vitae

Eric A. Posner

August 2025

Address University of Chicago Law School
1111 E. 60th St.
Chicago, IL 60637
(773)702-0425
eposner@uchicago.edu

Professional Experience

2013-present	Kirkland & Ellis Distinguished Service Professor of Law, University of Chicago
Fall 2024	Visiting Professor, Yale Law School
2022-2023	Counsel to the Assistant Attorney General, Antitrust Division, Department of Justice
Fall 2016	Visiting Professor, Columbia Law School
2003-2012	Kirkland & Ellis Professor of Law, University of Chicago
Fall 2008	Visiting Professor, NYU Law School
1998-2003	Professor of Law, University of Chicago
1998	Professor of Law, University of Pennsylvania
Fall 1997	Visiting Assistant Professor of Law, University of Chicago
1993-1998	Assistant Professor of Law, University of Pennsylvania
1992-1993	Attorney Adviser, Office of Legal Counsel, U.S. Department of Justice
1991-1992	Law Clerk, Judge Stephen F. Williams, U.S. Court of Appeals, D.C. Circuit

Books

Law and Social Norms: Harvard University Press (2000)
Japanese edition (Bokutakusha, 2002)
Chinese edition (China University of Political Science and Law Publishing House, 2005)
Taiwanese edition (Angle Publishing Company, 2006)
South Asia edition (Universal Law Publishing Company, 2009)

Chicago Lectures in Law and Economics (editor): Foundation Press (2000)

Cost-Benefit Analysis: Legal, Philosophical, and Economic Perspectives (editor, with Matthew Adler): University of Chicago Press (2001)

The Limits of International Law (with Jack Goldsmith): Oxford University Press (2005)
Chinese edition (Law Press of Beijing)
Macedonian edition

New Foundations of Cost-Benefit Analysis (with Matthew Adler): Harvard University Press (2006)
Arabic edition (Institute of Public Administration, Saudi Arabia, 2010)

Terror in the Balance: Security, Liberty and the Courts (with Adrian Vermeule): Oxford University Press (2007)

Social Norms, Nonlegal Sanctions, and the Law (editor): Edward Elgar (2007)

The Perils of Global Legalism: University of Chicago Press (2009)
Chinese edition (Law Press China, 2016)

Climate Change Justice (with David Weisbach): Princeton University Press (2010)
Korean edition (Sogan Hawoo, 2016)

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

Law and Happiness (editor, with Cass R. Sunstein): University of Chicago Press (2010)

The Economics of Public International Law (editor): Edward Elgar (2010)

The Executive Unbound: After the Madisonian Republic (with Adrian Vermeule): Oxford University Press (2011)
German edition (Duncker & Humblot, 2014)

Contract Law and Theory: Aspen (2011)
Second edition (2016)

Economic Foundations of International Law (with Alan Sykes): Harvard University Press (2013)
Georgian edition (Labyrinth Publishing House, 2014)
Persian edition (Hoosheedar Legal Publication, forthcoming)

The Twilight of Human Rights Law: Oxford University Press (2014)
Excerpt republished in Harper’s, October 2014

Last Resort: The Financial Crisis and the Future of Bailouts: University of Chicago Press (2018)
Chinese edition (Truth and Wisdom Press, 2022)
A Financial Times Book of the Year, 2018

Radical Markets: Uprooting Property and Democracy for a Just Society (with E. Glen Weyl): Princeton University Press (2018)
Korean edition (Bookie Publishing House)
Japanese edition (Toyo Keizai)
Chinese edition (Beijing Huazhang Graphics and Information Co. Ltd.)
Spanish edition (Antoni Bosch, 2019)
Brazilian edition (Companhia das Letras)
German edition (WBG, 2019)
Chinese (complex) edition (Gusa Press)
Italian edition (LUISS University Press)
Paperback edition, 2019
An Economist Book of the Year, 2018

The Demagogue’s Playbook: All Points Books (2020)
Chinese edition (Truth and Wisdom Press)

How Antitrust Failed Workers: Oxford University Press (2021)
Chinese edition (Ghezi Press, forthcoming)

Articles and Book Chapters

Contract Law in the Welfare State: A Defense of Usury Laws, the Unconscionability Doctrine, and Related Limitations on the Freedom to Contract, 24 J. Legal Stud. 283 (1995)

The Regulation of Groups: The Influence of Legal and Nonlegal Sanctions on Collective Action, 63 U. Chi. L. Rev. 133 (1996)

Law, Economics, and Inefficient Norms, 144 U. Pa. L. Rev. 1697 (1996)

The Legal Regulation of Religious Groups, 2 Legal Theory 33 (1996)

Altruism, Status, and Trust in the Law of Gifts and Gratuitous Promises, 1997 Wisc. L. Rev. 567 (1997)

The Political Economy of the Bankruptcy Reform Act of 1978, 96 Mich. L. Rev. 47 (1997) (reprinted in part in Bankruptcy Anthology (Charles J. Tabb ed. 2001)

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

The Parol Evidence Rule, the Plain Meaning Rule, and the Principles of Contractual Interpretation, 146 U. Pa. L. Rev. 533 (1998)

Symbols, Signals, and Social Norms in Politics and the Law, 27 J. Legal Stud. 765 (1998) (reprinted in Law and Economics (Nicholas Mercuro ed., Routledge Press, 2007); Foundations of Law and Economics (Robert Cooter & Francesco Parisi, eds., Edward Elgar, 2010))

The Strategic Basis of Principled Behavior: A Critique of the Incommensurability Thesis, 146 U. Pa. L. Rev. 1185 (1998)

The Demand for Human Cloning, in Clones and Clones: Facts and Fantasies About Human Cloning (Martha C. Nussbaum and Cass R. Sunstein, eds.): W.W. Norton (1998) (with Richard A. Posner) (Reprinted, with a postscript, in 27 Hofstra L. Rev. 579 (1999))

A Positive Theory of Chapter 11, 74 NYU Law Rev. 161 (1999) (with Kevin A. Kordana)

The Decline of Formality in Contract Law, in The Fall and Rise of Freedom of Contract (Frank Buckley, ed.): Duke University Press (1999)

Family Law and Social Norms, in The Fall and Rise of Freedom of Contract (Frank Buckley, ed.): Duke University Press (1999)

Shaming White Collar Criminals under the Federal Sentencing Guidelines, 42 J. Law & Econ. 365 (1999) (With Dan M. Kahan)

Arbitration and the Harmonization of International Commercial Law: A Defense of *Mitsubishi*, 39 Va. J. Inter'l Law 647 (1999)

Should Debtors Be Forced into Chapter 13?, 32 Loyola of Los Angeles L. Rev. 965 (1999)

A Theory of Customary International Law, 66 U. Chi. L. Rev. 1113 (1999) (with Jack L. Goldsmith)

Rethinking Cost-Benefit Analysis, 109 Yale L.J. 165 (1999) (with Matthew Adler) (Reprinted in part in Jurisprudence: Contemporary Readings, Narratives, and Problems (Robert Hayman et al., ed., 2d ed. 2002))

Contract Remedies: Foreseeability, Precaution, Causation, and Mitigation, in The Encyclopedia of Law and Economics (Boudewijn Bouckaert and Gerrit De Geest, eds.): Edward Elgar (2000)

A Theory of Contract Law Under Conditions of Radical Judicial Error, 94 Nw. U. L. Rev. 749 (2000)

Understanding the Resemblance Between Modern and Traditional Customary International Law, 40 Va. J. Int'l Law 639 (2000) (with Jack L. Goldsmith), excerpted in Edward M. Wise, International Criminal Law: Cases and Materials (3d ed. 2009)

Implementing Cost-Benefit Analysis When Preferences Are Distorted, 29 J. Legal Stud. 1105 (2000) (with Matthew Adler)

Introduction to the Conference on Cost-Benefit Analysis, 29 J. Legal Stud. 837 (2000) (with Matthew Adler)

Agency Models in Law and Economics, in *Chicago Lectures in Law and Economic* (Eric A. Posner ed., 2000), reprinted in *Game Theory and the Law* (Eric B. Rasmussen ed., 2007)

The Design and Interpretation of Contracts: Why Complexity Matters, 95 Nw. U.L. Rev. 91 (2000) (with Karen Eggleston and Richard Zeckhauser)

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

Law and Social Norms: The Case of Tax Compliance, 86 Va. L. Rev. 1781 (2000), excerpt reprinted in *Tax Controversies: Practice and Procedure* (forthcoming)

Cost-Benefit Analysis as a Solution to a Principal-Agent Problem, 53 Admin. L. Rev. 289 (2001)

Law and the Emotions, 89 Georgetown L.J. 1977 (2001), reprinted in *Law and Neuroscience* (Owen D. Jones, Jeffrey D. Schall, and Francis X. Shen, eds., Wolters Kluwer, 2nd ed. forthcoming)

Controlling Agencies with Cost-Benefit Analysis: A Positive Political Theory Perspective, 68 U. Chi. L. Rev. 1137 (2001)

The Law and Economics of Consumer Finance, 4 Amer. Law & Econ. Rev. 162 (2002) (with Richard Hynes)

Legislative Entrenchment: A Reappraisal, 111 Yale L.J. 1665 (2002) (with Adrian Vermeule)

Fear and the Regulatory Model of Counterterrorism, 25 Harv. J.L. & Pub. Pol. 681 (2002)

Controlling Agencies with Net Benefit Accounts: A Thought Experiment, 150 U. Pa. L. Rev. 1473 (2002)

Moral and Legal Rhetoric in International Relations: A Rational Choice Perspective, 31 J. Legal Stud. S115 (2002) (with Jack Goldsmith)

Interring the Nondelegation Doctrine, 69 U. Chi. L. Rev. 1721 (2002) (with Adrian Vermeule), republished in translation, *Revista De Direito Administrativo*, 282(1), 15–61 (2023)

Economic Analysis of Contract Law After Three Decades: Success or Failure?, 112 Yale L.J. 829 (2003), reprinted in *Economics of Contract Law* (Douglas Baird ed. 2007) and *Law in Society: Nature, Functions and Limits* (Robert Hillman ed., forthcoming)

Four Economic Perspectives on American Labor Law and the Problem of Social Conflict, 159 J. Inst’l & Theoretical Econ. 101 (2003)

The Jurisprudence of Greed, 151 U. Pa. L. Rev. 1097 (2003)

International Agreement: A Rational Choice Approach, 44 Va. J. Int’l L. 113 (2003) (with Jack Goldsmith)

Reparations for Slavery and Other Historical Injustices, 103 Colum. L. Rev. 689 (2003) (with Adrian Vermeule)

A Theory of the Laws of War, 70 U. Chi. L. Rev. 297 (2003)

Do States Have a Moral Obligation to Comply with International Law?, 55 Stan. L. Rev. 1901 (2003)

Accommodating Emergencies, 56 Stan. L. Rev. 605 (2003) (with Adrian Vermeule), reprinted in *The Constitution in Wartime* 55 (Mark Tushnet, editor, 2005)

Transfer Regulations and Cost-Effectiveness Analysis, 53 Duke L.J. 1067 (2003)

Probability Errors: Implications for Tort and Contract Law, 11 Sup. Ct. Econ. Rev. 125 (2004), reprinted in *The Law and Economics of Irrational Behavior* 456 (Francesco Parisi and Vernon Smith, eds., 2005); and in *Law and Economics of Uncertainty* (Joshua C. Teitelbaum, ed., forthcoming)

Transitional Justice as Ordinary Justice, 117 Harv. L. Rev. 761 (2004) (with Adrian Vermeule)

The Political Economy of State Bankruptcy Exemptions, 47 J. Law & Econ. 19 (2004) (with Richard Hynes and Anup Malani)

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

Judicial Independence in International Tribunals, 93 Calif. L. Rev. 1 (2005) (with John Yoo)

Optimal War and *Jus ad Bellum*, 93 Georgetown L.J. 993 (2005) (with Alan Sykes)

International Law and the Disaggregated State, 32 Fla. St. U. L. Rev. 797 (2005)

Dollars and Death, 72 U. Chi. L. Rev. 537 (2005) (with Cass Sunstein)

Is the International Court of Justice Biased?, 34 J. Legal Stud. 599 (2005) (with Miguel de Figueiredo)

Political Trials in Domestic and International Law, 55 Duke L. J. 75 (2005)

Should Coercive Interrogation Be Legal?, 104 Mich. L. Rev. 671 (2006) (with Adrian Vermeule)

Holding Internet Service Providers Accountable, 14 Sup. Ct. Econ. Rev. 221 (2006) (with Douglas Lichtman), reprinted in *The Law and Economics of Cybersecurity* (Mark F. Grady and Francesco Parisi eds. 2006)

The Decline of the International Court of Justice, in *International Conflict Resolution* 111 (Stefan Voigt, Max Albert, and Dieter Schmidtchen eds. 2006).

International Law: A Welfarist Approach, 73 U. Chi. L. Rev. 487 (2006)

International Law and the Rise of China, 7 Chi. J. Int’l L. 1 (2006) (with John Yoo)

Emergencies and Democratic Failure, 92 Va. L. Rev. 1091 (2006) (with Adrian Vermeule)

There Are No Penalty Default Rules in Contract Law, 33 Fla. St. U. L. Rev. 563 (2006)

The Law of Other States, 59 Stan. L. Rev. 131 (2006) (with Cass Sunstein), reprinted in *Comparative Constitutional Law*, edited by Mark Tushnet (Edward Elgar, forthcoming)

Chevronizing Foreign Relations, 116 Yale L.J. 1171 (2007) (with Cass Sunstein), reprinted in *Curtis A. Bradley, Foreign Relations Law* (Edward Elgar, forthcoming)

Signing Statements and Executive Power, 23 Constitutional Commentary 307 (2007) (with Curtis Bradley)

The Second-Order Structure of Immigration Law, 59 Stan. L. Rev. 809 (2007) (with Adam Cox)

Social Norms and Economic Analysis of the Law, in *Economic Analysis of Law: A European Perspective* (Aristides N. Hatzis ed., 2007)

An Economic Analysis of State and Individual Responsibility Under International Law, 9 Amer. L. & Econ. Rev. 72 (2007) (with Alan Sykes)

The Credible Executive, 74 U. Chi. L. Rev. 865 (2007) (with Adrian Vermeule)

The Case for For-Profit Charities, 93 Va. L. Rev. 2017 (2007) (with Anup Malani)

Timing Rules and Legislative Action, 121 Harv. L. Rev. 543 (2007) (with Jacob Gersen)

Climate Change and International Human Rights Litigation: A Critical Appraisal, 155 U. Pa. L. Rev. 1925 (2007), reprinted in *Human Rights and the Environment* (Svitlana Kravchenko, John E. Bonine, & Don Anton eds., 2008); *Environment and Health: Issues and Implications* (L. Lakshmi ed., 2008)

A Critique of the Odious Debt Doctrine, 70 Law & Contemp. Probs. 33 (2007) (with Albert Choi)

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

The International Protection of Cultural Property: Some Skeptical Observations, 8 Chi. J. Int’l L. 213 (2007)

Constitutional Showdowns, 156 U. Pa. L. Rev. 991 (2008) (with Adrian Vermeule)

Climate Change Justice, 96 Georgetown L.J. 1565 (2008) (with Cass Sunstein), excerpted or reprinted in Cases and Materials on Environmental Law (Daniel A. Farber, ed., forthcoming); Reflecting on Nature: Readings in Environmental Ethics and Philosophy (Lori Gruen, Dale Jamieson, and Christopher Schlottmann eds., 2d ed., Oxford, 2012); Ethics, Environmental Justice and Climate Change (by Paul G. Harris ed., Edward Elgar, forthcoming); The Ethical Life, by Russ Shafer-Landau (Oxford, forthcoming); Introducing Ethics and Contemporary Moral Issues, by Russ Shafer-Landau (Oxford, forthcoming)

Does Political Bias in the Judiciary Matter?: Implications of Judicial Bias Studies for Legal Reform, 75 U. Chi. L. Rev. 853 (2008)

Happiness Research and Cost-Benefit Analysis, 37 J. Legal Stud. S253 (2008) (with Matthew Adler)

Human Welfare, Not Human Rights, 108 Colum. L. Rev. 1758 (2008)

Soft Law: Lessons from Congressional Practice, 61 Stanford L. Rev. 573 (2008) (with Jacob E. Gersen)

Should Greenhouse Gas Permits Be Allocated on a Per Capita Basis?, 97 Calif. L. Rev. 51 (2009) (with Cass R. Sunstein), republished with modifications in Post-Kyoto International Climate Policy 343 (Joseph E. Aldy and Robert N. Stavins, eds. 2010).

Are Judges Overpaid?, 1 J. Legal Analysis 47 (2009) (with Stephen J. Choi and G. Mitu Gulati)

Erga Omnes Norms, Institutionalization, and Constitutionalism in International Law, 165 J. Institutional & Theoretical Econ. 5 (2009)

Judicial Evaluations and Information Forcing: Ranking State High Courts and Their Judges, 58 Duke L.J. 1313 (2009) (with Stephen J. Choi and Mitu Gulati)

Fault in Contract Law, 107 Mich. L. Rev. 1431 (2009), reprinted in Fault in American Contract Law (Omri Ben-Shahar & Ariel Porat eds., 2010)

Crisis Governance in the Administrative State: 9/11 and the Financial Meltdown of 2008, 76 U. Chi. L. Rev. 1613 (2009) (with Adrian Vermeule)

A Loan Modification Approach to the Housing Crisis, 11 Amer. L. & Econ. Rev. 579 (2009) (with Luigi Zingales)

The Rights of Migrants: An Optimal Contract Framework, 84 NYU L. Rev. 1403 (2009) (with Adam B. Cox), reprinted in Immigration and Nationality Law Review (forthcoming); reprinted in Law and Economics of Migration (Howard F. Chang, ed., forthcoming)

Professionals or Politicians?: The Uncertain Empirical Case for an Elected Judiciary, 26 J. Law, Econ., & Org. 290 (2010) (with Stephen Choi and Mitu Gulati)

Against Feasibility Analysis, 77 U. Chicago L. Rev. 657 (2010) (with Jonathan Masur)

Subconstitutionalism, 62 Stanford L. Rev. 1583 (2010) (with Tom Ginsburg)

ProCD v. Zeidenberg and Cognitive Overload in Contractual Bargaining, 77 U. Chicago L. Rev. 1181 (2010)

Economic Foundations of the Law of the Sea, 104 Amer. J. Inter’l L. 569 (2010) (with Alan Sykes)

Divide and Conquer, 2 J. Legal Analysis 417 (2010) (with Kathryn Spier and Adrian Vermeule)

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

- Universal Exceptionalism in International Law, 52 Harv. J. Int’l L. 1 (2011) (with Anu Bradford)
- The Limits of Constitutional Convergence, 11 Chicago J. Int’l L. 399 (2011) (with Rosalind Dixon)
- The Right to Withdraw in Contract Law, 40 J. Legal Stud. 115 (2011) (with Omri Ben-Shahar)
- The Flaws of Foreign Affairs Legalism, 51 Va. J. Int’l L. 507 (2011) (with Daniel Abebe)
- Constitutional Possibility and Constitutional Evolution, in Law, Economics and Evolutionary Theory (Peer Zumbansen and Graft-Peter Calliess eds. 2011)
- Judging Women, 8 J. Empirical Legal Stud. 504 (2011) (with Stephen J. Choi, Mitu Gulati, and Mirya Holman)
- Pricing Terms in Sovereign Debt Contracts: A Greek Case Study With Implications for the European Crisis Resolution Mechanism, 6 Capital Markets L.J. 163 (2011) (with Stephen J. Choi and Mitu Gulati)
- Climate Regulation and the Limits of Cost-Benefit Analysis, 99 California L. Rev. 1557 (2011) (with Jonathan Masur)
- Efficient Breach of International Law: Optimal Remedies, “Legalized Noncompliance,” and Related Issues, 110 Mich. L. Rev. 243 (2011) (with Alan Sykes)
- Deference to The Executive in the United States After September 11: Congress, the Courts, and the Office of Legal Counsel, 35 Harv. J.L. & Pub. Pol’y 213 (2012)
- Tyrannophobia, in *Comparative Constitutional Design* (Tom Ginsburg, ed. 2012) (with Adrian Vermeule)
- What Do Federal District Judges Want?: An Analysis of Publications, Citations, and Reversals, 28 J. Law, Econ., & Org. 518 (2012) (with Stephen J. Choi and Mitu Gulati)
- The Evolution of Contractual Terms in Sovereign Bonds, 4 J. Legal Analysis 131 (2012) (with Stephen J. Choi and Mitu Gulati)
- Unemployment, Regulation, and Cost-Benefit Analysis, 98 Va. L. Rev. 579 (2012) (with Jonathan Masur)
- Aggregation and the Law, 122 Yale L.J. 2 (2012) (with Ariel Porat)
- Human Rights, the Laws of War, and Reciprocity, 6 L. & Ethics of Human Rights 148 (2012)
- Delegation in Immigration Law, 79 U. Chicago L. Rev. 1285 (2012) (with Adam Cox)
- International Paretianism: A Defense, 13 Chicago J. Int’l L. 347 (2013) (with David Weisbach)
- The Questionable Basis of the Common European Sales Law: The Role of an Optional Instrument in Jurisdictional Competition, 50 Common Market L. Rev. 261 (2013)
- The Institutional Structure of Immigration Law, 80 U. Chicago L. Rev. 289 (2013)
- Benefit-Cost Analysis for Financial Regulation, 103 Amer. Econ. Rev.: Papers & Proceedings 393 (2013) (with E. Glen Weyl), reprinted in *Economics of Financial Law* (Geoffrey P. Miller, ed., Edward Elgar, forthcoming)
- The Law and Policy of Judicial Retirement: An Empirical Study, 42 J. Legal Stud. 111 (2013) (with Stephen J. Choi and Mitu Gulati)
- The Dynamics of Contract Evolution, 88 NYU L. Rev. 1 (2013) (with Stephen J. Choi and Mitu Gulati)

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

An FDA for Financial Innovation: Applying the Insurable Interest Doctrine to 21st-Century Financial Markets, 107 Northwestern U. L. Rev. 1307 (2013) (with E. Glen Weyl)

International Law and the Limits of Macroeconomic Cooperation, 86 S. Cal. L. Rev. 1025 (2013) (with Alan Sykes)

Inside or Outside the System?, 80 U. Chicago L. Rev. 1743 (2013) (with Adrian Vermeule)

How Well Do Measures of Judicial Ability Predict Judicial Performance?: A Case Study Using Securities Class Actions, 33 Inter'l Rev. L. & Econ. 37 (2013) (with Stephen J. Choi and Mitu Gulati)

Quadratic Voting as Efficient Corporate Governance, 81 U. Chicago L. Rev. 251 (2014) (with E. Glen Weyl)

Voting Rules in International Organizations, 15 Chicago J. Int'l L. 195 (2014) (with Alan O. Sykes), reprinted in The Law and Politics of International Organizations (Kenneth W. Abbott, ed., Edward Elgar, forthcoming)

Offsetting Benefits, 100 Va. L. Rev. 1165 (2014) (with Ariel Porat)

Unemployment and Regulatory Policy, in *Does Regulation Kill Jobs?* (edited by Cary Coglianese and Adam M. Finkel, 2014) (with Jonathan Masur)

Benefit-Cost Paradigms in Financial Regulation, 43 J. Legal Stud. S1 (2014) (with E. Glen Weyl)

Altruism Exchanges and the Kidney Shortage, 77 Law & Contemp. Probs. 289 (2014) (with Mitu Gulati & Stephen J. Choi), excerpted in part in The Law of Bioethics: Individual Autonomy and Social Regulation (Marsha Garrison, ed., West Publishing, 3d ed., forthcoming 2015)

Voting Squared: Quadratic Voting in Democratic Politics, 68 Vand. L. Rev. 441 (2015) (with E. Glen Weyl)

Cost-Benefit Analysis of Financial Regulations: A Response to Criticisms, 124 Yale L.J. F. 246 (2015) (with E. Glen Weyl)

The Role of Competence in Promotions from the Lower Federal Courts, 44 J. Legal Stud. S107 (2015) (with Stephen J. Choi and Mitu Gulati)

How Do Bank Regulators Determine Capital-Adequacy Requirements?, 82 U. Chicago L. Rev. 1853 (2015)

An Empirical Study of Political Bias in Legal Scholarship, 44 J. Legal Stud. 277 (2015) (with Adam Chilton)

A Framework for Bailout Regulation, 91 Notre Dame L. Rev. 479 (2015) (with Anthony Casey)

Toward a Pigouvian State, 164 U. Penn. L. Rev. 93 (2015) (with Jonathan Masur)

Institutional Flip-Flops, 94 Tex. L. Rev. 485 (2016) (with Cass Sunstein)

The Law, Economics, and Psychology of Manipulation, 1 J. Marketing Behavior 267 (2016)

Should Human Rights Law Play a Role in Development?, World Bank Econ. Rev. (2016)

The Votes of Other Judges, 105 Georgetown L.J. 159 (2016) (with Adrian Vermeule)

The Influence of History on States' Compliance with Human Rights Obligations, 56 Va. J. Int'l L. 216 (2016) (with Adam Chilton)

The Constitution of the Roman Republic, in Roman Law and Economics (Giuseppe Dari-Mattiacci ed., Oxford University Press, 2020).

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

Unquantified Benefits, 102 Cornell L. Rev. 87 (2016) (with Jonathan Masur)

Supreme Court Justices’ Loyalty to the President, 45 J. Legal Stud. 401 (2016) (with Lee Epstein)

What Legal Authority Does the Fed Need During a Financial Crisis?, 101 Minn. L. Rev. 1529 (2017)

Demystifying Schmitt, in the Oxford Handbook of Carl Schmitt (Jens Meierhenrich & Oliver Simons, eds., 2017) (with Adrian Vermeule)

Martti Koskeniemi on Human Rights: An Empirical Perspective, in The Law of International Lawyers 121 (Wouter Werner, Marieke de Hoon, & Alexi Galan eds. 2017)

Quadratic Election Law, 172 Public Choice 265 (2017) (with Nicholas Stephanopoulos)

Property Is Only Another Name for Monopoly, 9 J. Legal Analysis 51 (2017) (with Glen Weyl)

Moral Commitments in Cost-Benefit Analysis, 103 Va. L. Rev. 1809 (2017) (with Cass R. Sunstein)

A Proposal to Limit the Anticompetitive Power of Institutional Investors, 81 Antitrust L.J. 669 (2017) (with Fiona Scott Morton & Glen Weyl)

Should Regulation Be Countercyclical?, 34 Yale J. Reg. 857 (2018) (with Jonathan S. Masur)

The Dictator’s Handbook, U.S. Edition, in Can It Happen Here?: Authoritarianism in America (Cass Sunstein ed., 2018)

Country-Specific Investments and the Rights of Non-Citizens, 57 Va. J. Int’l L. 575 (2018) (with Adam Chilton)

Cost-Benefit Analysis and the Judicial Role, 85 U. Chicago L. Rev. 935 (2018) (with Jonathan Masur)

The Decline of Supreme Court Deference to the President, 166 U. Pa. L. Rev. 829 (2018) (with Lee Epstein)

Presidential Obstruction of Justice, 106 Calif. L. Rev. 1277 (2018) (with Daniel J. Hemel)

The Trump Presidency: A Constitutional Crisis in the United States?, in Constitutional Democracy in Crisis? (Mark A. Grabler, Sanford Levinson, and Mark Tushnet, eds., Oxford University Press, 2018)

A Proposal for Protecting Low-Income Workers from Monopsony and Collusion, Hamilton Project (2018) (with Alan B. Krueger)

Antitrust Remedies for Labor Market Power, 132 Harvard L. Rev. 536 (2018) (with Suresh Naidu and E. Glen Weyl), winner Antitrust Writing Awards, Best Academic Article, 2019

Treaties and Human Rights: The Role of Long-Term Trends, 81 L. & Contemp. Probs. 1 (2018) (with Adam S. Chilton)

A Proposal to Enhance Antitrust Protection Against Labor Market Monopsony, Roosevelt Institute Working Paper (2019) (with Ioana Marinescu)

Norming in Administrative Law, 68 Duke L.J. 1383 (2019) (with Jonathan Masur)

Rule-of-Law Objections to the Lender of Last Resort, in *Constitutions in Times of Financial Crisis* (Tom Ginsburg, Mark D. Rosen, and Georg Vanberg, eds., 2019)

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

Why Has Antitrust Law Failed Workers?, 104 Cornell L. Rev. 1453 (2020) (with Ioana Marinescu), awarded Jerry S. Cohen Memorial Fund Writing Award for Best Article of 2020 on Labor Antitrust

[Antitrust-Plus: Evaluating Additional Policies to Tackle Labor Monopsony](#), Roosevelt Institute (May 2020) (with Suresh Naidu)

The Antitrust Challenge to Covenants Not to Compete in Employment Contracts, 83 Antitrust L.J. 165 (2020)

[Policy Implications of the Common Ownership Debate](#), 65 Antitrust Bulletin (2021)

Ownership and Rent Stigma: Two Experiments, 7 Behavioral Public Policy 353 (2020) (with Tamar Kricheli-Katz)

Labor Monopsony and European Competition Law, Concurrences, No. 4-2020 (2020) (with Cristina A. Volpin)

Chevronizing Around Cost-Benefit Analysis, 70 Duke Law Journal 1109 (2021) (with Jonathan Masur)

The Economic Basis of the Independent Contractor / Employee Distinction, 100 Texas L. Rev. 353 (2021)

The Boundaries of Normative Law and Economics, 38 Yale J. Reg. 657 (2021)

The Limits of International Law Fifteen Years Later, 22 Chicago J. Int’l L. 110 (2021) (with Jack L. Goldsmith)

Labor Monopsony and the Limits of the Law, 57 J. Hum. Resources S284 (2022) (with Suresh Naidu)

The Roberts Court and the Transformation of Constitutional Protections for Religion: A Statistical Portrait, 2022 Sup. Ct. Rev. 315 (forthcoming, 2022) (with Lee Epstein)

Antitrust and Labor Markets: A Reply to Richard Epstein, 15 NYU J. Law & Liberty 389 (2022)

Antitrust and Inequality, 2 Amer. J. L. & Equality 190 (2022) (with Cass R. Sunstein)

Constitutional Challenges to Public Health Orders in Federal Courts during the COVID-19 Pandemic, 102 B.U. L. Rev. 1729 (2022) (with Kenny Mok)

The Political Economy of the Decline of Antitrust Enforcement, 85 Antitrust L.J. 441 (2023) (with Filippo Lancieri and Luigi Zingales)

Horizontal Collusion and Parallel Wage-Setting in Labor Markets, 90 U. Chi. L. Rev. 545 (2023) (with Jonathan Masur), Winner, 2023 Antitrust Writing Awards: Academic Articles, Concerted Practices

The Real Political Question Doctrine, 75 Stanford L. Rev. 1031 (2023) (with Curtis Bradley)

Enforcement of U.S. Antitrust Law in Labour Markets, J. Antitrust Enforcement (2023)

No-poach Agreements: An Overview of EU and National Case Law, [Concurrences](#) (May 4, 2023) (with Cristina Volpin)

Market Power, Not Consumer Welfare: A Return to the Foundations of Merger Law, 86 Antitrust L.J. 205 (2024)

Labor Market Traps, Behavioural Public Policy 1 (2024)

The New Labor Antitrust, 86 Antitrust L.J. 503 (2024)

Trump’s Lower Court Judges and Religion: An Initial Appraisal, 54 J. Legal Stud. 1 (2025) (with Steven Choi and Mitu Gulati)

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

The Common Political Foundations of Originalism and Cost-Benefit Analysis, 77 Administrative Law Review 65 (2025) (with Jonathan Masur)

The Tom Sawyer Effect: Invisible Work and Labor Market Power, 2024 Michigan State Law Review 551 (2024)

Merger Guidelines for the Labor Market, 153 J. Monetary Econ. (2025) (with David Berger, Thomas Hasenzagl, Kyle Herkenhoff, and Simon Mongey)

Market Share Liability and Anticompetitive Behavior: A Perspective from Antitrust Law, J. Law, Econ., & Policy (forthcoming)

Matching Markets and Labor Monopsony: A Comment on the Priest/Roth Debate, Yale J. Reg. (forthcoming)

Should Unions Play a Role in Merger Review?, Antitrust L.J. (forthcoming)

Book Reviews, Comments, Opinion Pieces, Replies, and Other Short Pieces

Norms, Formalities, and the Statute of Frauds: A Comment, 144 U. Pa. L. Rev. 1971 (1996)

Standards, Rules, and Social Norms, 21 Harv. J.L. & Pub. Policy 101 (1997)

Efficient Norms, in The New Palgrave Dictionary of Economics and the Law (Peter Newman, ed.): Macmillan (1998)

Notes Toward a Theory of Customary International Law, 92 ASIL Proceedings 53 (1998) (with Jack L. Goldsmith)

Law and Regret (Review of *Changing Your Mind* by E. Allan Farnsworth), 98 Mich. L. Rev. 1468 (2000)

Review of *The New Palgrave Dictionary of Economics and the Law*, edited by Peter Newman, 110 Econ J. 824 (2000)

Law and Economics for the Masses (Review of *Law’s Order* by David Friedman), Jurist (2000)

Strategies of Constitutional Scholarship (Review of *The Strategic Constitution* by Robert D. Cooter), 26 Law & Social Inquiry 529 (2001)

Review of *The Jurisprudential Foundations of Corporate and Commercial Law*, edited by Jody S. Kraus and Steven D. Walt, 112 Ethics 626 (2002)

Review of *Law and Market Economy*, by Robin Paul Malloy, 18 Economics and Philosophy 183 (2002)

The Signaling Model of Social Norms: Further Thoughts, 36 U. Rich. L. Rev. 465 (2002)

Further Thoughts on Customary International Law, 23 Mich. J. Inter’l L. 191 (2002) (with Jack Goldsmith)

Introduction to a Conference on Rational Choice and International Law, 31 J. Legal Stud. S1 (2002)

Comment on Jean Braucher’s Means Testing Consumer Bankruptcy, 7 Fordham J. Corp & Fin. L. 457 (2002)

When Reforming Accounting, Don’t Forget Regulation. Policy Matters 02-35, AEI-Brookings Joint Center (August 2002)

Forward to the Japanese Edition of Law and Social Norms (Ota Shozo et al. trans. 2002)

Crimes and Punishment, Wall Street Journal, April 11, 2003, p. A10 (with Adrian Vermeule)

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

Tobacco Regulation or Litigation? (Review of *Smoke-Filled Rooms* by W. Kip Viscusi), 70 U. Chi. L. Rev. 1141 (2003)

The Nondelegation Doctrine: A Postmortem, 70 U. Chi. L. Rev. 1331 (2003) (with Adrian Vermeule)

The Patriot Act Under Fire, Wall Street Journal, December 9, 2003, p. A10 (with John Yoo)

Bankruptcy Act of 1978, in Major Acts of Congress (Brian K. Landsberg ed., 2003), vol. 1, p. 59

Reign of Terror, Chicago Tribune, January 18, 2004 (with John Yoo)

Evaluating Transfer Regulations, 26 Regulation 42 (2004)

International Court of Hubris, Wall Street Journal, April 7, 2004, p. A18 (with John Yoo)

Bring Back the Baathists, The New York Times, April 28, 2004, p. A23

Emergencies and Political Change: A Reply to Tushnet, 56 Stan. L. Rev. 1593 (2004) (with Adrian Vermeule)

A “Torture” Memo and Its Tortuous Critics, The Wall Street Journal, July 6, 2004, p. A22 (with Adrian Vermeule)

Remarks on the Alien Tort Claims Act and Transitional Justice, 98 Am. Soc’y Int’l L. Proc. 56 (2004)

Transnational Legal Process and the Supreme Court’s 2003-2004 Term: Some Skeptical Observations, 12 Tulsa Journal of Comparative and International Law 23 (2004)

Terrorism and the Laws of War, 5 Chi. J. Int’l L. 423 (2005)

Contract Theory, in The Blackwell Guide to the Philosophy of Law and Legal Theory 138 (Martin P. Golding and William A. Edmundson eds. 2005)

Law, in The Encyclopedia of Social Measurement 463 (Kimberly Kempf-Leonard ed. 2005)

All Justice, Too, Is Local, The New York Times, December 30, 2004, p. A23

All Hail...King George?, Foreign Policy Online, <http://www.foreignpolicy.com/story/files/story2814.php> (March 2005)

The International Court of Justice: Voting and Usage Statistics, ASIL Papers and Proceedings 130 (2005).

Where’s the Old Bolton When We Need Him?, Los Angeles Times, April 19, 2005, p. B13 (with John Yoo)

Judicial Clichés On Terrorism, The Washington Post, August 8, 2005, p. A15 (with Adrian Vermeule)

Justice Within Limits, The New York Times, September 26, 2005, p. A20

The Politics of Saddam’s Trial, openDemocracy.net, October 31, 2005, republished in German translation as Recht in Verlegenheit, Süddeutsche Zeitung, Nov. 28, 2005, p. 15

Reply to Helfer and Slaughter, 93 Cal. L. Rev. 957 (2005) (with John Yoo)

Sins of the Fatherland, The Boston Globe, March 5, 2006, E4

The New International Law Scholarship, 34 Ga. J. Inter’l & Comp. L. 463 (2006)

A Threat That Belongs Behind Bars, The New York Times, June 25, 2006, s. 4, p. 12

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

Apply the Golden Rule to al Qaeda?, *The Wall Street Journal*, July 15, 2006, p. A9

Signing Statements: It’s a President’s Right, *The Boston Globe*, August 3, 2006 (with Curtis Bradley)

A Better Way on Detainees, *The Washington Post*, August 4, 2006, p. A17 (with Jack Goldsmith)

Review of *Terrorism and the State: Rethinking the Rules of State Responsibility*, by Tal Becker, 121 *Pol. Sci. Q.* 505 (2006)

The Humanitarian War Myth, *The Washington Post*, October 1, 2006, p. B7

On Learning from Others, 59 *Stan. L. Rev.* 1309 (2007) (with Cass Sunstein)

What the Cold War Taught Us, *The Wall Street Journal*, April 21, 2007, p. A9

Agencies Should Ignore Distant-Future Generations, 74 *U. Chi. L. Rev.* 139 (2007)

Review of Robert E. Scott and Paul B. Stephan, *The Limits of Leviathan: Contract Theory and the Enforcement of International Law*, 101 *Amer. J. Int’l L.* 509 (2007)

The New Race for the Arctic, *The Wall Street Journal*, August 3, 2007, p. A8

Pay China to Cut Emissions, *The Financial Times*, August 5, 2007, p. 11 (with Cass Sunstein)

Originalism and Emergencies: A Reply to Lawson, 87 *B.U. L. Rev.* 313 (2007) (with Adrian Vermeule)

The Great Divide, *The New Republic.com*, December 20, 2007 <http://tnr.com/politics/story.html?id=86d685dd-948a-43db-b496-260027868950> (with Cass Sunstein)

Review of *Law without Nations?: Why Constitutional Government Requires Sovereign States*, by Jeremy A. Rabkin, 4 *Perspectives on Politics* 432 (2007)

[Out of Commission](#), *Slate*, February 13, 2008 (with Jack Goldsmith)

The Ethics of Climate Change, 31 *Regulation* 14 (2008) (with Cass Sunstein)

Policy by Reflex, Review of Stephen Holmes, *The Matador’s Cape: America’s Reckless Response to Terrorism*, 70 *Review of Politics* 513 (2008)

Diplomacy, Arbitration, and International Courts, in *The Role of International Courts* (Carl Baudenbacher & Erhard Busek eds., German Law Publishers, 2008)

Review of Benjamin Wittes, *Law and the Long War*, *New York Post*, July 27, 2008

Does Europe Believe in International Law?, *Wall Street Journal*, November 25, 2008 (with Jack Goldsmith)

[Destructive Technologies Require Us to Reassess Civil Liberties](#), *Boston Review*, December 10, 2008

Introduction to the Conference on Law and Happiness, 37 *J. Legal Stud.* S1 (2008) (with Cass Sunstein)

[An Argument Against Legal Extremism](#), Review of Philip K. Howard, *Life Without Lawyers: Liberating Americans From Too Much Law*, *The Daily Beast*, February 17, 2009 (with Robert Silver)

[The Better, Cheaper Mortgage Fix](#), *Slate*, March 2, 2009 (with Luigi Zingales)

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

[New Foundations of Cost-Benefit Analysis: A Reply to Professors Sinden, Kysar, and Driesen](#), 3 Regulation & Governance 72 (2009) (with Matthew Adler)

Outcomes, Outcomes, Review of Jack M. Balkin & Reva B. Siegel, eds., *The Constitution in 2020*, The New Republic, August 12, 2009, p. 43 (with Adrian Vermeule)

[Do Women Make Better Judges?](#), Slate, October 2, 2009 (with Stephen Choi, Mitu Gulati, and Mirya Holman)

[The Decider](#), Review of Frank J. Colluci, *Justice Kennedy’s Jurisprudence: The Full and Necessary Meaning of Liberty*, The New Republic, The Book, January 11, 2010

[Executive Decision](#), Review of Benjamin Kleinerman, *The Discretionary President: The Promise and Peril of Executive Power*, The New Republic, The Book, March 30, 2010

[Garzon and the Trouble With International Law](#), Wall Street Journal, April 14, 2010

[The Limits of Limits](#), Review of Kal Raustiala, *Does the Constitution Follow the Flag?: The Evolution of Territoriality in American Law*, The New Republic, May 5, 2010, p. 36

[The Case for Electing Judges in Missouri](#), Newsweek, May 17, 2010

[The Prudent and the Imprudent](#), Review of Gabriel Schoenfeld, *Necessary Secrets: National Security, the Media, and the Rule of Law*, The New Republic, The Book, May 17, 2010

[Europe’s Missing Identity](#), Wall Street Journal, European Edition, June 4, 2010

[The Gaza Blockade and International Law](#), Wall Street Journal, June 4, 2010, p. A19

[Echoes of Subprime Ring Out Across Greek Debt Crisis](#), Financial Times, June 28, 2010 (with Mitu Gulati)

[The Four Tops](#), Review of Noah Feldman, *Scorpions: The Battles and Triumphs of FDR’s Great Supreme Court Justices*, The New Republic, The Book, October 14, 2010

[POTUS-Phobia](#), Review of Bruce Ackerman, *The Decline and Fall of the American Republic*, The New Republic November 11, 2010, p. 33

[How Not To Solve the European Debt Crisis](#), Slate, December 2, 2010 (with Mitu Gulati)

Introduction, in *The Economics of Public International Law* (Eric A. Posner, ed.): Edward Elgar (2010)

[Evaluating the Effects of International Law: Next Steps](#), 1 Global Policy 334 (2010),

[One Side Now](#), Review of Erwin Chemerinsky, *The Conservative Assault on the Constitution*, The New Republic, The Book, January 2, 2011

[Why Is Originalism So Popular?](#), The New Republic, January 14, 2011, online

[Obama’s Cost-Benefit Revolution](#), The New Republic, January 22, 2011, online

[Huck and Jim and Law](#), Review of Ethan J. Leib, *Friend v. Friend: The Transformation of Friendship and What the Law Has to Do with it*, The New Republic, The Book, February 21, 2011

[Dockets of War](#), The National Interest, March-April 2011

[The Court of Literature](#), Review of Kenji Yoshino, *A Thousand Times More Fair: What Shakespeare’s Plays Tell Us About Justice*, The New Republic, The Book, April 14, 2001

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

[The Lying Game](#), Review of James Stewart, *Tangled Webs: How False Statements are Undermining America: From Martha Stewart to Bernie Madoff*, The New Republic, The Book, May 29, 2011

[The Beginning and the End](#), Review of Elizabeth Price Foley, *The Law of Life and Death*, The New Republic, The Book, June 23, 2011

[Libyan Legal Limbo](#), Slate, June 27, 2011 (with Adrian Vermeule)

[Stop Complaining About Harold Koh’s Interpretation of the War Powers Act](#), The New Republic, July 1, 2011

[Shooting It Out](#), Review of Adam Winkler, *Gunfight: The Battle Over the Right to Bear Arms in America*, The New Republic, The Book, July 6, 2011

[Obama Should Raise the Debt Ceiling on His Own](#), The New York Times, July 22, 2011 (with Adrian Vermeule)

[Casual with the Court](#), Review of Kevin J. McMahon, *Nixon’s Court: His Challenge to Judicial Liberalism and Its Political Consequences*, The New Republic, The Book, October 24, 2011

[Outside the Law](#), Foreign Policy, October 25, 2011

[Liberalism and Concealment](#), Review of Anita Allen, *Unpopular Privacy: What Must We Hide?*, The New Republic, The Book, December 13, 2011

[Newt and His Surprising Liberal Allies](#), Slate, December 20, 2011

Review of Larry May, *Global Justice and Due Process*, 25 Ethics & Inter’l Aff. 481 (2011)

[The Longest Battle](#), Review of Mary Dudziak, *War Time*, The New Republic, The Book, February 6, 2012

[A Minimalist Reparations Regime for the International Criminal Court](#), Human Rights and International Criminal Law Online Forum, February 2012, reprinted in *Contemporary Issues Facing the International Criminal Court* (Richard H. Steinberg ed., Brill Nijhoff)

[An FDA for Securities Could Help Avert Crises](#), Bloomberg, April 2, 2012 (with Glen Weyl)

[Not Worth the Gamble](#), Slate, April 4, 2012 (with Glen Weyl)

[How Do We Know?](#), Review of Jim Manzi, *Uncontrolled: The Surprising Payoff of Trial-and-Error for Business, Politics, and Society*, The New Republic, The Book, April 25, 2012

[How Low Can We Go?](#), Review of Daniel Gross, *Better, Stronger, Faster: The Myth of American Decline ... and the Rise of a New Economy*, The New Republic, The Book, May 17, 2012

Transitional Prudence: A Comment on David Dyzenhaus, *Leviathan as a Theory of Transitional Justice*, 51 NOMOS 218 (2012)

[Perils and Privileges](#), Review of Ananda Rose, *Showdown in the Sonoran Desert: Religion, Law, and the Immigration Controversy*, The New Republic, The Book, June 11, 2012

[The Absurd International Criminal Court](#), Wall Street Journal, June 11, 2012, at A13

[The Imperial President of Arizona](#), Slate, June 26, 2012

[Capitalism Is Regulation](#), Review of Edward Conard, *Unintended Consequences: Why Everything You’ve Been Told about the Economy Is Wrong*, The New Republic, The Book, July 5, 2012

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

Some Skeptical Comments on Beth Simmons’s Mobilizing for Human Rights, 44 NYU J. Inter’l Law & Politics 819 (2012)

[The Other Value of Life](#), Review of Kenneth R. Feinberg, Who Gets What: Fair Compensation After Tragedy and Financial Upheaval, The New Republic, The Book, July 31, 2012

[Assange’s London Bunker](#), Wall Street Journal, August 21, 2012, at A13

[The Lincoln Laws](#), Review of John Fabian Witt, Lincoln’s Code, Slate, August 28, 2012

[The World Doesn’t Love the First Amendment](#), Slate, September 25, 2012

[Overruled: How Conservative Was Chief Justice Rehnquist?](#), Review of John A. Jenkins, The Partisan: The Life of William Rehnquist, The New Republic, The Book, October 2, 2012

[Obama’s Drone Dilemma](#), Slate, October 8, 2012

[The Drones Are Coming to Libya](#), Slate, October 17, 2012

[Why Amnesty Should Lose at the Supreme Court](#), Slate, October 26, 2012

[Citizens United Is Still Worth Hating](#), Slate, November 9, 2012

[Don’t Worry About the Voting Rights Act](#), Slate, November 20, 2012 (with Nicholas Stephanopoulos)

[Is Israel or Hamas Breaking International Law in Gaza?](#), Slate, November 27, 2012

[The War on Terror Will Be Ever With Us](#), Slate, December 11, 2012

[Why the U.S. Shouldn’t Sign On to Empty Human Rights Treaties](#), Slate, December 21, 2012

[Against Casino Finance](#), National Affairs, No. 14, p. 58, Winter 2013 (with Glen Weyl)

[The President Has the Power to Raise the Debt Ceiling on His Own](#), Slate, January 4, 2013

[The Danger Lurking Behind the Platinum Coin](#), Slate, January 10, 2013

[How Aaron Swartz’s Cause Wins in the End](#), Slate, January 22, 2013

[There’s No Such Thing as an Illegal Immigrant](#), Slate, February 4, 2013

[Benefit-Cost Analysis for Financial Regulation](#), HLS Forum on Corporate Governance and Financial Regulation, February 4, 2013 (with Glen Weyl)

[President Obama Can Do Anything He Wants To Fight Terrorism](#), Slate, February 5, 2013

[Ronald Dworkin’s Error](#), Slate, February 19, 2013

[The Mother of DNA Databases](#), Slate, March 5, 2013

[Indefinite Articles](#), Slate, March 19, 2013

[The Real Problem With Law Schools](#), Slate, April 2, 2013

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

Introduction to Symposium on Immigration Law and Institution Design, 80 U. Chicago L. Rev. 1 (2013) (with Adam B. Cox and Richard A. Epstein)

[Fool’s Gold](#), Slate, April 11, 2013

[The New Law We Need in Order to Deal With Dzhokhar Tsarnaev](#), Slate, April 22, 2013

[The United States Can’t Be the World’s Courthouse](#), Slate, April 24, 2013

[President Obama Can Shut Guantanamo Whenever He Wants](#), Slate, May 2, 2013

[Shareholder Democracy Needs People To Pay for Their Votes](#), Financial Times, May 13, 2013 (with Glen Weyl)

[The Killer Robot War Is Coming](#), Slate, May 15, 2013

[Secrets and Scoops](#), Slate, May 17, 2013 (exchange with Emily Bazelon)

[President Ruthless](#), Slate, May 23, 2013

[The Good Way to Buy Votes](#), Slate, June 5, 2013

[Quadratic Vote Buying, Square Root Voting, and Corporate Governance](#), HLS Forum on Corporate Governance and Financial Regulation, June 6, 2013 (with Glen Weyl)

[Secrecy and Freedom](#), New York Times Room for Debate, June 9, 2013 (exchange with Jameel Jaffer)

[Supreme Court 2013: Year in Review](#), Slate, June 20-27, 2013 (with Emily Bazelon, Walter Dellinger, and Richard Posner)

[Why Won’t Anyone Take Edward Snowden?](#), Slate, July 3, 2013

[Wrong Number](#), Slate, July 9, 2013

[How to Make Poison Pills Palatable](#), New York Times DealBook, July 17, 2013

[Secrets and Scoops, Part 2](#), Slate, July 22, 2013 (exchange with Emily Bazelon)

[The Best Rescue Plan for Detroit](#), Slate, July 23, 2013

[Square Root Voting: A New Approach to Regulation of Chaebol, Keiretsu, and Other Conglomerate Organizations in Asia](#), The CLS Blue Sky Blog, July 24, 2013 (with E. Glen Weyl and Sang-Seung Yi)

[The Virtues of Government Secrecy](#), Slate, August 5, 2013

[Frisk Aversion](#), Slate, August 21, 2013

[The U.S. Has No Legal Basis to Intervene in Syria](#), Slate, August 28, 2013

[Obama Is Only Making His War Powers Mightier](#), Slate, September 3, 2013

[The U.S. Ignores the U.N. Charter Because It’s Broken](#), Slate, September 9, 2013

[Assad and the Death of the International Criminal Court](#), Slate, September 19, 2013

[On the Debt Ceiling, at Least, Congress Will Blink](#), Slate, September 30, 2013

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

[Emergency Powers Let the President Borrow](#), New York Times Room for Debate, October 2, 2013

[Three Ways Obama Could Raise the Debt Ceiling On His Own](#), The New Republic, online, October 7, 2013

[If He Has to, Obama Should Raise the Debt Ceiling Unilaterally](#), Slate, October 11, 2013 (with Emily Bazelon)

[Never Again](#), Slate, October 16, 2013

[A Solution to the Collective Action Problem in Corporate Reorganization](#), HLS Forum on Corporate Governance and Financial Regulation, October 23, 2013 (with Glen Weyl)

[Is the Constitution Written Like the Da Vinci Code?](#), Slate, October 31, 2013

[The Paradox of Secrecy](#), Review of Rahul Sagar, Secrets and Leaks, The New Republic, November 11, 2013, at p. 52

[Keep Spying on Foreigners, NSA](#), Slate, November 14, 2014

[You Can Have Either Climate Justice or a Climate Treaty](#), Slate, November 19, 2014

[Benefit-Cost Paradigms in Financial Regulation](#), HLS Forum on Corporate Governance and Financial Regulation, November 20, 2013 (with Glen Weyl)

[Centrists Should Mourn the Demise of the Filibuster](#), Slate, November 22, 2013

[Bitcoin’s Bandwagon Has Never Been More Crowded](#), The New Republic, online, December 3, 2013

[How to Make Sure the Volcker Rule Survives in Court](#), Bloomberg View, December 10, 2013

[Stop Fussing Over Personhood](#), Slate, December 11, 2013

[The NSA’s Metadata Program Is Perfectly Constitutional](#), Slate, December 30, 2013

[Forget the Framers](#), Slate, January 8, 2014

[The Case for Cost-Benefit Analysis in Financial Regulation](#), 36 Regulation 30, Winter 2013-2014

[Make Journalists Testify](#), Slate, January 16, 2014

[Let’s Make a Deal with Snowden](#), Slate, January 27, 2014

[A Powerful Tool to Use With Caution](#), New York Times, Room for Debate, January 29, 2014

[The Presidency Comes With Executive Power. Deal With It](#), The New Republic, online, February 3, 2014

[Socialized Law Would Be a Massive, Unworkable Nightmare](#), The New Republic, online, February 4, 2014

[Now That Boehner Has Backed Down, Let’s Fix The Debt Ceiling For Good](#), The New Republic, online, February 11, 2014

[The Paranoid Libertarian and His Enemy, the Angry Liberal](#), Slate, February 14, 2014

[Why Are China and Japan Inching Toward War Over Five Tiny Islands?](#), Slate, February 25, 2014

[Let Crimea Go](#), Slate, March 10, 2014

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

[What to Do About Crimea? Nothing](#), Slate, March 27, 2014

[In Defense of GM](#), Slate, April 10, 2014

[The Puzzle of Paying Amy](#), Slate, April 25, 2014

[The U.S. Constitution Is Impossible to Amend](#), Slate, May 5, 2014

[Sorry, America, the New World Order Is Dead](#), Foreign Policy, May 6, 2014

[We All Have the Right to Be Forgotten](#), Slate, May 14, 2014

[China Can Sink All the Boats in the South China Sea](#), Slate, May 28, 2014

[Rappers v. Scotus](#), Slate, June 12, 2014

[Supreme Court 2014: Year in Review](#), Slate, June 25-July 1, 2014 (with Emily Bazelon, Walter Dellinger, Dahlia Lithwick, Richard Posner, and Larry Tribe)

[Boehner’s Lawsuit Against Obama Is a Loser](#), Slate, July 11, 2014

Why and How the Government Should Assess the Costs and Benefits of Financial Regulations, 13 Review of Financial Regulation Studies 4 (Summer 2014) (with E. Glen Weyl)

[We Don’t Need to End “Too Big to Fail.”](#) Slate, July 28, 2014

[Thomas Piketty Is Wrong: America Will Never Look Like a Jane Austen Novel](#), The New Republic, July 31, 2014

[Obama Is Legally Allowed to Enforce—or Not Enforce—the Law](#), The New Republic, August 3, 2014

[Yes, Obama Can Stop Millions of Deportations](#), Slate, August 12, 2014

[Treaty-ish](#), Slate, August 28, 2014

[Let Scotland Go Free](#), Slate, September 11, 2014

[Obama Can Bomb Pretty Much Anything He Wants To](#), Slate, September 23, 2014

[Eric Holder’s Legacy](#), Slate, September 25, 2014

[How Do Bank Regulators Determine Capital Adequacy Requirements?](#), Harvard Law School Forum on Corporate Governance and Financial Regulation, October 15, 2014.

[A Moral Market](#), Slate, October 17, 2014

[Legacy Time](#), Slate, November 6, 2014

[A Radical Solution to Global Income Inequality: Make the U.S. More Like Qatar](#), The New Republic, November 6, 2014 (with Glen Weyl)

[The Human-Rights Charade](#), The Chronicle of Higher Education, November 17, 2014

[The President’s Constitutional Authority Is Clear](#), New York Times Room For Debate, November 18, 2014

[Obama’s Immigration Plan Is Perfectly Constitutional](#), Slate, November 20, 2014

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

[Obama’s Immigration Order Is a Gift to Future Republican Presidents](#), The New Republic, November 23, 2014

[The Twilight of Human Rights Law](#), openDemocracy.net, November 25, 2014

[Prosecuting Dictators Is Futile](#), Slate, December 3, 2014

[The Case Against Human Rights](#), The Guardian, December 4, 2014

[Why Obama Won’t Prosecute Torturers](#), Slate, December 9, 2014

[The Year of the Dictator](#), Slate, December 22, 2014

[Have Human Rights Treaties Failed?](#), New York Times Room for Debate, December 28, 2014 (with Kenneth Roth)

[Why Uber Will—and Should—Be Regulated](#), Slate, January 5, 2015

[Let’s Admit It: Human Rights Law Is a Complete Failure](#), Washington Post, January 14, 2015

[Why Do Judges and Politicians Flip-Flop?](#), Slate, January 26, 2015

[Universities Are Right—and Within Their Rights—to Crack Down on Speech and Behavior](#), Slate, February 12, 2015

[Faithfully Executed](#), Slate, February 19, 2015

[Exchanges No One Can Use?](#), Slate, March 2, 2015

[The Silence of the Law](#), Review of *Scrap of Paper: Breaking and Making International Law During the Great War*, by Isabel V. Hull, New Rambler Review, March 4, 2015

[Should Charity Be Logical?](#), Slate, March 26, 2015

[A Terrible Shame](#), Slate, April 9, 2015

[Mutual Funds’ Dark Side](#), Slate, April 16, 2015

[Citizenship for Sale](#), Slate, May 13, 2015

[A Fractious Majority](#), Slate, June 30, 2015

[It’s Not Donating. It’s Selling](#), Slate, July 29, 2015

[The Strangest Campaign Pledge](#), Slate, August 13, 2015

[Trump Is the Only Candidate Talking About a Taboo Subject](#), Slate, August 25, 2015

[The Spectrum of Suffering](#), Slate, September 8, 2015

[Is America Heading Toward Dictatorship?](#), Slate, October 23, 2015

[Bernanke’s Biggest Blunder](#), Slate, October 29, 2015

[Has Obama Upheld the Rule of Law](#), Slate, November 9, 2015

[Why Are People So Scared of Syrian Refugees](#), Slate, November 20, 2015

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

[The Republican-Democratic Divide on Civil Liberties](#), Slate, December 7, 2015

[Potemkin Power?](#), New Rambler Review, December 9, 2015

[ISIS Gives Us No Choice but to Consider Limits on Speech](#), Slate, December 16, 2015

[How Can Banks Get Away With Charging Such High Fees?](#), Slate, January 7, 2016

[Campus Free Speech Problems Are Less Than Meets the Eye](#), Cato Unbound, January 8, 2016

[Warren’s Wrong: Bank Rules Need Cost-Benefit Test](#), BloombergView, February 3, 2016

[Ted Cruz Is Not Eligible to Be President](#), Slate, February 8, 2016

[The Tragedy of Antonin Scalia](#), Slate, February 16, 2014

[Merrick Garland Would Shift the Court Decisively Leftward](#), Slate, March 17, 2016

[What Should We Expect From the Supreme Court’s Showdown Over Immigration?](#), New York Times Magazine, April 18, 2016 (with Emily Bazelon)

Review of *The Future of Law and Economics: Essays in Reform and Recollection* by Guido Calabresi, 54 J. Econ. Lit. 600 (2016)

Presidential Leadership and the Separation of Powers, Daedalus 35 (summer 2016)

[Citizens Can’t Sue the Government for Laws They Don’t Like](#), The New York Times, May 23, 2016

[And if Elected: What President Trump Could or Couldn’t Do](#), The New York Times, June 4, 2016

[New York Times Magazine Discussion of the Supreme Court at End of Term](#), Part I, June 24, 2016

[New York Times Magazine Discussion of the Supreme Court at End of Term](#), Part II, June 27, 2016

[Are There Limits to Trump’s Power?](#), The New York Times, November 10, 2016

Review of *The Court and The World: American Law and the New Global Realities*, by Stephen Breyer, 126 Yale L.J. 504 (2016)

[A Monopoly Donald Trump Can Pop](#), The New York Times, December 7, 2016 (with Glen Weyl and Fiona Scott Morton)

[How Antonin Scalia’s Ghost Could Block Donald Trump’s Wall](#), The New York Times, January 25, 2017 (with Daniel Hemel and Jonathan Masur)

[Gorsuch Must Condemn Trump’s Attack on Judge](#), The New York Times, February 4, 2017

[Judges v. Trump: Be Careful What You Wish For](#), The New York Times, February 15, 2017

Coase Theorem, in *Economic Ideas You Should Forget* (Bruno S. Frey & David Iselin, eds., 2017)

[The Government Gorsuch Wants to Undo](#), The New York Times, April 1, 2017 (with Emily Bazelon)

Introduction, in *The Timing of Lawmaking* (Frank Fagan & Saul Levmore, eds., 2017)

[Will the Presidency Survive this President?](#), The New York Times, May 21, 2017 (with Emily Bazelon)

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

[The Case for Obstruction Charges](#), The New York Times, June 15, 2017 (with Daniel Hemel)

Quadratic Voting and the Public Good: Introduction, 172 Public Choice 1 (2017) (with E. Glen Weyl)

[If Trump Pardons, It Could Be a Crime](#), The New York Times, July 21, 2017 (with Daniel Hemel)

[The Obstruction of Justice Case Against Donald Trump](#), Slate, July 27, 2017 (with Daniel Hemel)

[A Better Way to Protect Robert Mueller](#), The New York Times, August 7, 2017 (with Daniel Hemel)

[Trump Could Be Removed for Political Incompetence—Using the 25th Amendment](#), The Washington Post, September 12, 2017

[Why the Trump Team Should Fear the Logan Act](#), The New York Times, December 4, 2017 (with Daniel Hemel)

[The Logan Act and its Limits](#), Lawfare, December 7, 2017 (with Daniel J. Hemel)

[America Is Nowhere Near a Constitutional Crisis](#), Foreign Policy, December 16, 2017

[It’s Time to Audit America’s Secrets](#), Foreign Policy, February 2, 2018

[Trump Has Plenty of Bark. His Predecessors Had More Bite](#), Washington Post, February 2, 2018

[How Congress Can Protect Mueller](#), The New York Times, February 4, 2018

[Sponsor an Immigrant Yourself](#), Politico, February 13, 2018

[Corporate America Is Suppressing Wages for Many Workers](#), The New York Times, February 28, 2018 (with Alan B. Krueger)

[More and More Companies Have Monopoly Power Over Workers’ Wages. That’s Killing the Economy](#), Vox, April 6, 2018

[Want Our Personal Data? Pay for It](#), The Wall Street Journal, April 20, 2018 (with E. Glen Weyl)

[The Real Villain Behind Our New Gilded Age](#), The New York Times, May 1, 2018 (with Glen Weyl)

[Neoliberalism and Human Rights](#), Lawfare, May 1, 2018

[How Economists Became So Timid](#), Chronicle, May 7, 2018

[A Radical Proposal for Resolving Cases Like Masterpiece Cakeshop—Outside The Courts](#), Vox, June 4, 2018

[A Radical Proposal for Improving Capitalism](#), Barron’s, June 15, 2018 (with E. Glen Weyl)

[If the Supreme Court is Nakedly Political, Can It Be Just?](#), New York Times, July 9, 2018 (with Lee Epstein)

[Who Is Brett Kavanaugh?](#), New York Times, September 3, 2018 (with Emily Bazelon)

[The Far-Reaching Threats of a Conservative Court](#), New York Times, October 23, 2018

[Why the FTC Should Focus on Labor Monopsony](#), Pro-Market, November 5, 2018

[House Democrats Can Constrain Trump. They Can Also Overreach](#), New York Times, November 7, 2018

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

[Liberty versus Monopoly](#), J. Amer. Affairs, November 20, 2018 (with Glen Weyl)

[Bill Barr Just Argued Himself Out of a Job](#), New York Times, December 21, 2018 (with Daniel Hemel)

[Yes, Bill Barr’s Memo Really is Wrong About Obstruction of Justice](#), Lawfare, December 26, 2018 (with Daniel Hemel)

[The President Is Still Subject to Generally Applicable Criminal Laws: A Response to Barr and Goldsmith](#), Lawfare, January 8, 2019 (with Daniel Hemel)

[The Surprising Place Mueller Found Resistance to Trump](#), New York Times, April 23, 2019 (with Daniel Hemel)

[Keep Increasing Pressure Against Noncompetes](#), Law360, May 7, 2019

[The Anti-monopoly Backlash Reaches the Supreme Court](#), The Atlantic, May 15, 2019

[What Antitrust Attorneys Need to Know About Labor Monposony](#), Law360, May 24, 2019

[House Democrats Have More Potent Options Than Impeachment](#), The Atlantic, May 29, 2019

[The Administration’s Plan to Redefine “Human Rights” Along Conservative Lines](#), Washington Post, June 14, 2019

[The Trouble Starts If Facebook’s New Currency Succeeds](#), The Atlantic, June 25, 2019

[Milton Friedman Was Wrong](#), The Atlantic, August 22, 2019

[The Meritocracy Muddle](#), Project Syndicate, September 13, 2019

[The Impeachment Trap](#), Project Syndicate, October 1, 2019

[The Anticompetitive Effects of Covenants Not to Compete](#), CPI Antitrust Chronicle, January 2020

[The Executive Unbound, Pandemic Edition](#), Lawfare, March 23, 2020

[Governors Might Not Be Able to Save Us, but They Can Raise Hell](#), New York Times, April 2, 2020 (with Emily Bazelon)

[Public Health in the Balance: Judicial Review of Pandemic-Related Government Restrictions](#), Lawfare, April 20, 2020

[Cost-Benefit Analysis Supports Continuing the National Shutdown](#), Regulatory Review, April 20, 2020 (with Jonathan Masur)

[The Limits of the World Health Organization](#), Lawfare, April 21, 2020

[You Can Sue to Stop Lockdowns, But You Can’t Sue to Get Them](#), Washington Post, May 4, 2020

[Protect the Justice Department From the President](#), New York Times, May 13, 2020 (with Emily Bazelon)

[Why Some Republican Leaders Are Defecting to Biden](#), Newsweek, July 3, 2020

[What Could Trump Do or Not Do in a Second Term?](#), New York Times, July 13, 2020

[Trump Has the Worst Record at the Supreme Court of Any Modern President](#), Washington Post, July 20, 2020

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

[Climate Change and Human Rights](#), in Climate Change, Justice and Human Rights 21 (David Ismangil, Karen van der Schaaf, and Lars van Troost, eds., Amnesty International, 2020)

[Avoiding the Trump Trap](#), Project Syndicate, August 10, 2020

[How the Religious Right Has Transformed the Supreme Court](#), New York Times, September 22, 2020

[What the U.S. Election Is Really About](#), Project Syndicate, October 14, 2020

[Legal Assaults on Coronavirus Shutdowns Threaten To Undermine the Liberal State](#), Washington Post, October 15, 2020

[Is the Long-Awaited Constitutional Crisis at Hand?](#), Project Syndicate, October 21, 2020

[Biden’s Precarious Victory](#), Project Syndicate, November 6, 2020

[Why Prosecuting Trump Is a Very Bad Idea](#), New York Times, December 3, 2020

[America Passed the Trump Stress Test](#), Project Syndicate, December 7, 2020

[The Trump Paradox](#), Project Syndicate, December 22, 2020

[The Effort to Disqualify Trump Is Worth It](#), Project Syndicate, January 12, 2021

[Why Joe Biden Must Not Shy Away From the Full Power of the Presidency](#), New York Times, January 21, 2021

[Why Try Trump?](#), Project Syndicate, February 20, 2021

[Antitrust Is Back in America](#), Project Syndicate, March 12, 2021

[Senator Klobuchar’s Antitrust Bill Doesn’t Go Far Enough](#), ProMarket, March 22, 2021

[The End of Amateur Hour for the NCAA](#), Project Syndicate, April 7, 2021

[Long Live the Imperial President?](#), Project Syndicate, May 12, 2021

[Biden’s Antitrust Revolutionaries](#), Project Syndicate, June 18, 2021

[The Supreme Court’s NCAA Ruling Has Huge Implications Outside of Sports](#), Washington Post, June 22, 2021

[The Antitrust War’s Opening Salvo](#), Project Syndicate, July 21, 2021

[COVID and the Conservative Economic Crack-up](#), Project Syndicate, August 24, 2021

[In Emergencies, Judges Usually Defer to Politicians. Not during the Pandemic](#), Washington Post, August 24, 2021

[America’s Return to Realism](#), Project Syndicate, September 3, 2021

[You Deserve a Bigger Paycheck. Here’s How You Might Get It](#), New York Times, September 23, 2021

[The Justices Doth Protest Too Much](#), Project Syndicate, October 7, 2021

[Facebook’s Foreign Disasters](#), Project Syndicate, November 5, 2021

[Antitrust’s Labor Market Problem](#), ProMarket, November 8, 2021

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

[The Rise of the Labor-Antitrust Movement](#), Competition Policy International, November 29, 2021

[Introduction to the Conference on Labor Market Power](#), 90 U. Chicago L. Rev. 261 (2023)

[Toward a Market Power Standard for Merger Review](#), ProMarket, April 7, 2023

[The Whig History of the Merger Guidelines](#), ProMarket, May 31, 2023

[The Trump Indictment and America’s Political Order](#), Project Syndicate, June 14, 2023

[The Revised Merger Guidelines Will Restore Principle of Competition to Merger Review](#), ProMarket, July 20, 2023

[The Politics of the Trump Trials](#), Project Syndicate, August 9, 2023

[Comment on Merger Guidelines Submitted to DOJ and FTC](#), August 17, 2023 (with David W. Berger, Thomas Hasenzagl, Kyle F. Herkenhoff, Simon Mongey)

[The Role of Consumer Welfare in Merger Enforcement](#), ProMarket, September 7, 2023

[Banning Trump](#), Project Syndicate, September 18, 2023

[The Strange Case of Sam Bankman-Fried](#), Project Syndicate, October 12, 2023

No-Poach Antitrust Litigation in the United States, Concurrences (November 2023) (with Sarah Roberts)

Review of *The Problem of Twelve: When a Few Financial Institutions Control Everything* by John Coates, Journal of Economic Literature (forthcoming)

[The Monopolists Fight Back](#), Project Syndicate, November 24, 2023

[A Trump Dictatorship Won’t Happen](#), Project Syndicate, December 7, 2023

[The AI Octopus](#), Project Syndicate, January 8, 2024

[Will Trump Be Disqualified?](#), Project Syndicate, February 5, 2024

[The Future of Work in the AI Era](#), Project Syndicate, April 11, 2024

[What to Look for in Trump’s First Trial](#), Project Syndicate, April 22, 2024

[Why Noncompete Clauses Should Be Banned](#), Project Syndicate, May 3, 2024

[The FTC Noncompete Ban Is Legal](#), ProMarket, May 8, 2024

[Rough Justice for Trump](#), Project Syndicate, May 31, 2024

[Merger Review Should Incorporate a Role for Unions](#), ProMarket, June 14, 2024

[Prosecutions and Politics Don’t Mix](#), Project Syndicate, July 29, 2024

[Is a Pro-Labor Republican Party Possible?](#), Project Syndicate, August 29, 2024

[How Cultural Norms Help Companies Exploit Unpaid Workers](#), ProMarket, September 25, 2024

[Is Labor Antitrust a Nonexistent Problem?](#), ProMarket, October 24, 2024

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

[Why Many Workers Now Vote Republican](#), Project Syndicate, October 29, 2024

[The Business Interests That Promoted Cost-Benefit Analysis and Originalism Will Also Kill Them](#), ProMarket, December 2, 2024

[Trump’s Pro-Corporate Populism Cannot Last](#), Project Syndicate, December 11, 2024

[What Happened to International Law?](#), Project Syndicate, January 16, 2024

[Antitrust from Trump to Biden to Trump](#), ProMarket, March 11, 2025

Testimony

Committee on the Judiciary, Subcommittee on Commercial and Administrative Law, U.S. House of Representatives: H.R. 833, The Bankruptcy Reform Act of 1999, March 16, 1999

Committee on the Judiciary, U.S. Senate: [Special Counsels and the Separation of Powers](#), September 26, 2017

Federal Trade Commission, [Competition and Consumer Protection in the 21st Century: Labor Markets and Antitrust Policy](#), October 16, 2018

Federal Trade Commission, Non-Competes in the Workplace: Examining Antitrust and Consumer Protection Issues, January 9, 2020

Committee on the Judiciary, Subcommittee on Antitrust, Commercial, and Administrative Law, U.S. House of Representatives: [Reviving Competition, Part 4: 21st Century Antitrust Reforms and the American Worker](#), September 28, 2021

Department of Justice and Federal Trade Commission Workshop on Draft Merger Guidelines, University of Chicago Law School, November 3, 2023

Education

Harvard Law School. J.D., magna cum laude, 1991

Yale University. B.A., M.A. in philosophy, summa cum laude, 1988

Professional Organizations

Maryland Bar Association (admitted 1991)

Illinois Bar Association (admitted 2018)

American Law and Economics Association (board member, various times)

American Law Institute

Grants, Fellowships, and Awards

John M. Olin fellowship, University of Southern California (3/95)

University Research Foundation grant, University of Pennsylvania (6/96)

Olin Fellow, University of Virginia Law School (9/02)

Simon Visiting Scholar, Florida State University College of Law (3/18/04)

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

Fellow, American Academy of Arts and Sciences (elected 2010)

Sloan Grant for Conference on Benefit-Cost Analysis and Financial Regulation (2013) (with Glen Weyl)

Economist Book of the Year, for *Radical Markets* (2018)

Financial Times Book of the Year, for *Last Resort* (2018)

Bloomberg 50, for *Radical Markets* (2018)

Antitrust Writing Award, for Antitrust Remedies for Labor Market Power (2019)

American Antitrust Institute Jerry S. Cohen Memorial Fund Writing Award, for Antitrust Remedies for Labor Market Power (2019)

Lawdragon 500 Leading Lawyers in America (2019, 2020)

Teaching

Contracts; Secured Transactions; Bankruptcy; Corporate Reorganization; Seminar on Contract Theory; Seminar on Game Theory and the Law; Employment and Labor Law; Public International Law; International Human Rights Law; Foreign Relations Law; International Law Workshop; European Union Law; Seminar on the Financial Crisis of 2008-2009; Banking Law; Financial Regulation; Seminar on the Federal Reserve Board; Seminar on Executive Power; Seminar on Originalism and Its Critics; Corporate Finance

Other Professional Activities

Counsel, MoloLamken (2018-2021; 2024-)

Counsel, Boies, Schiller & Flexner (2010-2016)

Cofounder and editor, New Rambler Review (2015-2017)

Member (elected 2014), Council Member (elected 2021); American Law Institute

Columnist, Slate Magazine (2012-2016)

Editor, Journal of Legal Studies (1998-2010)

Adviser, Restatement (Third) of Restitution, American Law Institute

Referee for Journal of Law and Economics, Journal of Economic Literature, Oxford University Press, Harvard University Press, Edward Elgar, Quarterly Journal of Economics, National Science Foundation, Law and Social Inquiry, American Economic Review, Journal of Law, Economics, & Organization, American Law and Economics Review, International Review of Law and Economics, American Journal of Political Science, Law and Society Review, Journal of Policy Analysis and Management, Journal of the European Economics Association, Health Affairs, University of Chicago Press, Canada Council for the Arts, World Politics, Supreme Court Economic Review, Law and Philosophy, Ethics and International Affairs, Institute of Medicine, Israel Science Foundation, Conflict Management and Peace Science, Smith Richardson Foundation, Yale University Press, Hart Publishing, Journal of Peace Research, British Journal of Political Science, National Academy of Sciences, Social Theory and Practice, Politics, Philosophy and Economics, Journal of Global Ethics, Climate Policy, Political Science Quarterly, Journal of Benefit-Cost Analysis, Journal of Legal Analysis, European Journal of International Law, Antitrust Law Journal, Journal of Antitrust Enforcement

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

Member, Editorial Board, Law & Social Inquiry (2000-2001)

Member, Board of Directors, American Law and Economics Association (2000-2003; 2013-2016)

Member, Board of University Publications, University of Chicago (2001-2004)

Member, Editorial Board, Review of Law and Economics (2004-)

Member, Oxford University Press Legal Education Advisory Board (2006-)

Member, Editorial Board, Journal of Benefit-Cost Analysis (2009-)

Short-Term Consultant, World Bank (2007)

Participant in Simulated Canada-United States Negotiation Over the Northwest Passage, sponsored by ArcticNet (Ottawa, February 2008)

Member, Faculty Steering Committee, Milton Friedman Institute (2008-2010)

Member, International Advisory Board, the Centre for Law, Economics and Society, University College London (2013-)

Member, Editorial Board, Economic Analysis of Law Review (2014-)

Sympatic Inc., Advisory Board (2019-)

Member, Committee on International Relations, University of Chicago (2003-)

Consulting Relationships (since 2020)

Le v. Zuffa (2024). Provided expert report supporting a proposal to settle a lawsuit brought by employees of mixed martial arts league against their employer. Retained by Berger Montague, attorney for plaintiffs.

Department of Justice (2024). Advised on investigation of a potential merger between two entertainment-related entities. The facts are confidential.

Sona Asset Management (2024). Advised financial institution about legal issues in Tapestry/Capri merger litigation.

Ford Motor Co. (2021-2022). Advised automobile manufacture on antitrust strategy relating to distribution.

Difederico v Amazon.com, Inc. et al., No. T-445-20 (Federal Court, Canada) (2021). Advised on arbitration issues relating to class action lawsuit against Amazon in Canada. Served as expert; retained by Orr Taylor LLP and Strosberg Sasso Sutts LLP.

Latham & Watkins (2020). Advised law firm on draft commercial code for proposed foreign development zone in middle east.

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

Annex 3. Materials Considered

Legal Pleadings

Plaintiff Qualcomm Inc.’s Second Amended Complaint. Case No. 1:24-cv-00490-MN. June 3, 2025.

DTX_00936, *Arm Ltd. v. Qualcomm, Inc.*. Case No. 1:22-cv-01146-MN.

DTX_00937, *Arm Ltd. v. Qualcomm, Inc.*. Case No. 1:22-cv-01146-MN.

Federal Trade Commission Complaint *In the Matter of Nvidia/Arm*. Case No. 9404. December 2, 2021.

December 16, 2024 *Arm Ltd. v. Qualcomm, Inc.* CA No. 22-1146 Trial Transcript

Depositions

Deposition of Rene Haas. December 12, 2023

Deposition of Phil Hughes. June 17, 2025.

Deposition of Martin Weidmann. June 20, 2025.

Deposition of Gerard Williams. June 25, 2025.

Deposition of Will Abbey. June 26, 2025.

Deposition of Michael Williams. June 27, 2025.

Deposition of Richard Grisenthwaite. July 2, 2025.

Deposition of Christopher Patrick. July 2, 2025.

Deposition of Paul Williamson. July 2, 2025.

Deposition of Cristiano Amon. July 3, 2025.

Deposition of Lynn Couillard. July 3, 2025.

Deposition of Rene Haas. July 7, 2025.

Deposition of Ziad Asghar. July 7, 2025.

Deposition of Jignesh Trivedi. July 9, 2025.

Deposition of Durga Malladi. July 10, 2025.

Deposition of Jonathan Weiser. July 11, 2025.

Deposition of Ann Chaplin. July 11, 2025.

Literature

Marie-Laure Allain et al., *Vertical Integration as a Source of Hold-up*, Toulouse School of Economics, Working Paper n. 14-525 (2014).

Carl Shapiro, *Vertical Mergers and Input Foreclosure Lessons from the AT&T/Time Warner Case*, 59 Rev. of Indus. Org. 303 (2021).

Joseph Farrell & Paul Klemperer, *Coordination and Lock-In: Competition with Switching Costs and Network Effects*, Handbook of Industrial Organization, Chapter 31 (2007).

Chiara Fumagalli & Massimo Motta, *Dynamic Vertical Foreclosure*, 63 J. of L. and Econ (2020).

Oliver Hart et al., *Vertical Integration and Market Foreclosure*, 1990 Brookings Papers on Economic Activity: Microeconomics (1990).

Janusz A. Ordover et al., *Equilibrium Vertical Foreclosure*, 80 American Economic Review (1990).

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

Partrick Rey & Jean Tirole, *A Primer on Foreclosure*, 3 *Handbook of Industrial Organization* (2007).

Helena Perrone, *Chips in on a Merger: The Arm-Nvidia Case*, 98 *Int’l J. of Indus. Org.* 103130 (Jan. 2025).

John Vickers, *Concepts of Competition*, 47 *Oxford Economic Papers* 1 (1995).

Other Documents

Rene Haas in ACQ2 by Acquired Podcast, *How Arm became the worlds default chip architecture with ARM CEO Rene Haas* (December 2, 2024),

https://open.spotify.com/episode/2sxLw7ti6tC7xr3NQnphXG?si=KMdhxFHlQMqtGupg_c6kjA&nd=1&dlsi=ba9cf1c344524296.

Arm.com, *Architecture: The Basis for Innovation in the Digital World*,

<https://www.arm.com/architecture> (last visited August 5, 2025).

Annual Report and Consolidated Financial Statements For the year ended 31 March 2024, Arm Holdings Limited (May 29, 2024) <https://investors.arm.com/static-files/5e34983c-cbb5-461c-b6ca-5749f6d7efd9>.

Bloomberg Technology, *Arm CEO on Intel, Chips, AI, Listing in US* (October 22, 2024),

www.youtube.com/watch?v=6FnBz8rxWUY.

Arm.com, *Glossary: Instruction Set Architecture (ISA)*, <https://www.arm.com/glossary/isa> (last visited August 5, 2025).

Josh Horwitz, *Relief and Challenges for Chipmakers as Nvidia-Arm Megadeal Collapses*, Reuters (Feb. 8, 2022, 8:21 AM), <https://www.reuters.com/markets/us/relief-challenges-chipmakers-nvidia-arm-megadealcollapses-2022-02-08/>.

RISC-V, *Members*, <https://riscv.org/members/> (last visited August 5, 2025).

Michael Acton, *Arm to explore designing its own chips, chief executive says*, Financial Times (July 30, 2025) Accessed August 5, 2025, <https://www.ft.com/content/735c8a2d-0ce0-49d6-934f-8aee3e927108?shareType=nongift>.

Financial Times, *How Arm could be the unexpected winner of the AI investment boom* (October 30, 2024), www.ft.com/content/80a1e79e-b662-40e9-9b41-6d1070f694a8?FTCamp=engage/CAP1/website/Channel_muckrack//B2B.

Mike Johnson, *Arm Holdings CEO Predicts 50% Data Center CPU Market Share by 2025*,

WebProNews (July 31, 2025), <https://www.webpronews.com/arm-holdings-ceo-predicts-50-data-center-cpu-market-share-by-2025/>.

Mobile Unleashed, *The Origin and Evolution of ARM Processors In Our Devices*, (December 2015) semiwiki.com/books/Mobile%20Unleashed%20-%20front%20to%20back.pdf.

Mohamed Awad, *Half of the Compute Shipped to Top Hyperscalers in 2025 will be Arm-based*, Arm Newsroom (April 1, 2025), <https://newsroom.arm.com/blog/half-of-compute-shipped-to-top-hyperscalers-in-2025-will-be-arm-based>.

Nell Walker, *Qualcomm: A History*, Manufacturing Digital (May 16, 2020),

<https://manufacturingdigital.com/technology/qualcomm-history> (last visited Aug. 5, 2025).

Qualcomm, Inc., *Products*, <https://www.qualcomm.com/products> (last visited August 5, 2025).

Arm, *Consumer Technologies: Smartphones*, <https://www.arm.com/markets/consumer-technologies/smartphones> (last visited Aug. 5, 2025).

Arm.com, *Glossary: SoC Development*, <https://www.arm.com/glossary/soc-development> (last visited August 5, 2025).

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

Software ecosystems, Arm Developer,

<https://developer.arm.com/documentation/102252/0100/Software-ecosystems> (last visited August 5, 2025).

The Arm Ecosystem: Powering AI Everywhere – From Cloud to Edge, Arm Newsroom (May 19, 2025), <https://newsroom.arm.com/blog/arm-computex-2025>.

Arm.com, *The Official History of Arm*, <https://newsroom.arm.com/blog/arm-official-history> (last visited August 8, 2025).

Tim Bradshaw, *Rene Haas: ‘Arm has the most ubiquitous computer architecture on the planet,’* Financial Times (June 7, 2024) <https://www.ft.com/content/5b191c4c-119f-4f97-bc61-622d20bfa46d>.

Arm’s “what is” series, *What is... CPU architecture*, (August 18, 2021)

www.youtube.com/watch?v=KGHdDVLnKJM&t=144s.

Amd.com, *Intel Antitrust Rulings*, <https://www.amd.com/en/legal/notices/antitrust-ruling.html>, (last visited August 7, 2025).

Bates Numbered Documents

ARM_00055357

ARM_00079520

ARM_00079530

ARM_00082009

ARM_00089058

ARM_00094099

ARM_00094197

ARM_00094200

ARM_00094204

ARM_00103918

ARM_00110020

ARM_00110511

ARM_00110513

ARM_01215486

ARM_01215564

ARM_01215885

ARM_01215886

ARM_01215887

ARM_01215888

ARM_01215889

ARM_01231038

ARM_01241285

ARM_01241565

ARM_01241577

ARM_01241585

ARM_01424394

ARMQC_00000640

ARMQC_00001038

ARMQC_00001136

ARMQC_00001163

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

ARMQC_02720799
ARMQC_02727610
ARMQC_02729064
ARMQC_02739661
ARMQC_02762991
ARMQC_02762992
ARMQC_02763016
ARMQC_02771126
ARMQC_02778180
QCARM_0338573
QCARM_0343120
QCARM_0343954
QCARM_3424233
QCARM_3424399
QCARM_3424873
QCARM_3428243
QCARM_3433633
QCARM_3460976
QCARM_3460981
QCARM_3522626
QCARM_7477120
QCARM_7484471
QCARM_7484477
QCARM_7484481
QCARM_7509431
QCARM_7517677
QCVARM_0465277
QCVARM_0526828
QCVARM_0607499
QCVARM_0616970
QCVARM_0618354
QCVARM_0618382
QCVARM_0618384
QCVARM_0714768
QCVARM_0715414
QCVARM_0716360
QCVARM_0717008
QCVARM_0717291
QCVARM_0847094
QCVARM_0847188
QCVARM_0847548
QCVARM_0848033
QCVARM_0851120
QCVARM_0857149
QCVARM_0857152
QCVARM_0866825

HIGHLY CONFIDENTIAL – ATTORNEY’S EYES ONLY

QCVARM_0867422
QCVARM_1012343
QCVARM_1012399
QCVARM_1014030
QCVARM_1014955
QCVARM_1018853
QCVARM_1019083
QCVARM_1030816
QCVARM_1066811
QCVARM_1066820
QCVARM_1070919
QCVARM_1070944
QCVARM_1070982
QCVARM_1070993
QCVARM_1071021
QCVARM_1071165
QCVARM_1119108
QCVARM_1120153
QCVARM_1120206
QCVARM_1120224
QCVARM_1120267
QCVARM_1120481

EXHIBIT 5

HIGHLY CONFIDENTIAL - OUTSIDE ATTORNEYS' EYES ONLY

Page 1

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

QUALCOMM INCORPORATED, §
A DELAWARE CORPORATION, §
QUALCOMM TECHNOLOGIES, § C.A. NO. 24-490-MN
INC., A DELAWARE §
CORPORATION, §
§
PLAINTIFFS, §
§
- AGAINST - §
§
ARM HOLDINGS PLC., §
F/K/A ARM LTD., A U.K. §
CORPORATION, §
§
DEFENDANT. §

HIGHLY CONFIDENTIAL - OUTSIDE ATTORNEYS' EYES ONLY

ORAL AND VIDEOTAPED DEPOSITION OF
MICHAEL BROGIOLI
SEPTEMBER 25, 2025

ORAL AND VIDEOTAPED DEPOSITION OF MICHAEL
BROGIOLI, produced as a witness at the instance of
the Plaintiff and duly sworn, was taken in the above
styled and numbered cause on Thursday, September 25,
2025, from 8:20 a.m. to 4:29 p.m., before TAMARA
CHAPMAN, CSR, RPR-CRR in and for the State of Texas,
reported by computerized stenotype machine, at the
offices of Kirkland & Ellis, LLP, 401 Congress
Avenue, Austin, Texas, pursuant to the Federal Rules
of Civil Procedure and any provisions stated on the
record herein.

HIGHLY CONFIDENTIAL - OUTSIDE ATTORNEYS' EYES ONLY

<p style="text-align: right;">Page 6</p> <p>1 counsel may proceed. 2 MICHAEL BROGIOLI, 3 having been first duly sworn, testified as follows: 4 EXAMINATION 5 BY MS. NYARADY: 6 Q. Good morning. 7 A. Good morning. 8 Q. You submitted an expert report in this 9 case. Right? 10 A. That's correct. 11 Q. What are you an expert in? 12 A. There are probably a number of different 13 areas over the years, but my report in this matter 14 talks about aspects of CPUs and instruction sets, 15 other aspects of CPU designers or those that offer 16 CPU designs in the industry, technical aspects of 17 Arm's CPUs, Qualcomm's CPUs, [REDACTED] 18 [REDACTED] and 19 aspects of what are generally issues being called 20 things like support in this case, CPU testing 21 verification. Those are some of the things I talk 22 about. 23 Q. Well, those are things you talk about, 24 but are you actually an expert in Arm's subsequent 25 releases?</p>	<p style="text-align: right;">Page 8</p> <p>1 mischaracterizes. 2 A. As we go to my report, I think it's the 3 last section, I discuss a number of the features 4 that are planned at the time of the filing of my 5 report. [REDACTED] And I 6 talk about the value of those features in general, 7 and as well as aspects of them as sort of [REDACTED] 8 [REDACTED] as it stands 9 at the time of the report. 10 Q. Okay. And so if it changes, and the 11 actual [REDACTED] 12 [REDACTED], your opinion may very well 13 change. Is that fair? 14 A. I would think if the [REDACTED] -- I'm sorry -- 15 the [REDACTED] 16 [REDACTED], the date of my report to 17 something else, my opinion might change. 18 Q. Did you actually see [REDACTED] 19 [REDACTED] 20 A. I'd have to go back to my report for you, 21 but I believe I looked at a number of roadmap slides 22 and those kinds of things, and also talked to Arm's 23 Richard Grisenthwaite -- I think I'm pronouncing his 24 name right -- as well as others about what was 25 [REDACTED].</p>
<p style="text-align: right;">Page 7</p> <p>1 A. In the aspects I talk about in my report, 2 yes. 3 Q. Well, that's interesting because Arm has 4 told us that [REDACTED]. 5 How are you an expert in [REDACTED]? 6 A. I would say I'm offering my opinions on 7 what [REDACTED]. 8 Q. So intended features, not actual 9 features? 10 A. My understanding is at this point they're 11 [REDACTED]. 12 Q. So you're an expert in Arm's planned 13 technology? 14 A. I would say in the value that those 15 features are going to bring to the market, assuming 16 they're manufactured in parts, yes. 17 Q. So you're assuming that -- you're 18 assuming what in your -- in figuring that out? 19 I mean, the [REDACTED] Right? Arm 20 has told us [REDACTED] 21 [REDACTED] 22 [REDACTED] 23 So how are you figuring out what the 24 value of [REDACTED]? 25 MR. JANES: Object to form,</p>	<p style="text-align: right;">Page 9</p> <p>1 (Exhibit 1 was marked.) 2 Q. Okay. Who else did you speak with? You 3 know, let me mark as an exhibit -- I know you 4 brought your own copy, but just for the record, I'm 5 going to mark as Exhibit 1 a copy of your rebuttal 6 expert report. 7 A. Okay. 8 Q. And can you just confirm for me that what 9 we've marked as Exhibit 1 is indeed your expert 10 report in this case? 11 I should say it's entitled: The rebuttal 12 expert report. 13 A. This looks like a copy of my rebuttal 14 report, yes. 15 Q. Okay. So who did you speak to about [REDACTED]? 16 A. I'm just going to this section in my 17 report to refresh myself on who I spoke with. 18 Q. So which section are you going to? 19 A. It's Roman numeral XIV on Page 159. 20 (Pause.) 21 Q. And, you know, I'm not -- go ahead. 22 Sorry. You looked like you were going to say 23 something. 24 A. I was going to say I remember speaking 25 with Mr. Grisenthwaite in a meeting. It looks like</p>

3 (Pages 6 - 9)

HIGHLY CONFIDENTIAL - OUTSIDE ATTORNEYS' EYES ONLY

<p style="text-align: right;">Page 10</p> <p>1 I'm citing to some of his deposition testimony as 2 well. 3 Going from memory, I think the only 4 conversation I remember having was with him. 5 Q. Okay. And I'm not trying to trick you. 6 I mean, that's why I'm asking -- I did not see 7 anything in this section about you referring to any 8 conversations or relying on any conversations. 9 So I just want to make sure I'm being 10 clear. You're testifying now that you will be 11 relying on conversations with Mr. Grisenthwaite for 12 your [REDACTED] opinion? 13 A. I would say I had a conversation with him 14 that confirmed what I'm discuss -- as I recall, 15 confirmed what I'm discussing in this section, based 16 on these types of roadmap and technical slides and 17 other materials I'm referring to. 18 Q. Okay. When did you speak with him? 19 A. Roughly a few days, I would say, prior to 20 when I filed this report. 21 Q. Did you speak with him more than once? 22 A. No. I think there was just the one 23 conversation. 24 Q. Do you recall about how long the 25 conversation was?</p>	<p style="text-align: right;">Page 12</p> <p>1 Mr. Grisenthwaite and, you know, whatever else 2 you've cited to here, is there anything else that 3 you reviewed with respect to your opinions on [REDACTED]? 4 A. I would say it would be the slides as you 5 pointed to in here, the various URLs that I cite to, 6 a lot of them being Arm materials. There's at least 7 one paper from the White House on statements they 8 made about memory safety and programming languages 9 fairly recently, and my industry experience, I would 10 say. 11 Q. The White House reference, that's not 12 specific to Arm's [REDACTED], is it? 13 A. I don't have it in front of me, but I 14 don't recall it being a White House paper referring 15 to Arm specifically. It was more general trends in 16 computing. 17 Q. And the Arm URL cites that you've got 18 here, those are not specific to [REDACTED] either, are 19 they? 20 A. I don't have the web pages in front of 21 me. Just based on the language in the URL, it looks 22 like they're talking about aspects of these features 23 that are -- or features [REDACTED] 24 [REDACTED]. 25 Q. So you think that -- I mean, we can -- we</p>
<p style="text-align: right;">Page 11</p> <p>1 A. Between a half hour and an hour. 2 Q. What did you talk about? 3 A. One of the topics were -- was some of the 4 [REDACTED]-related things that you were asking about. 5 There may have been discussion about some of -- 6 aspects of some of the Nuvia design, and I think he 7 had made a couple of statements around things like 8 installing of an ACT test suite or things of that 9 nature, or just general topics I recall. 10 Q. Anything else you can think of as you sit 11 here? 12 A. It may be mentioned in my report, but not 13 as I remember right now. 14 Q. Okay. Do you recall anything specific 15 that he told you about [REDACTED]? 16 A. Not outside of what's in my report. I 17 mean, he made just general industry comments around 18 some aspects of security and things like that. I 19 don't recall it being super in the weeds, for 20 example, about a particular vendor or something like 21 that. 22 Q. Okay. And other than -- there's a 23 PowerPoint deck in here that you cite to several 24 times in [REDACTED]. 25 Other than that and the conversation with</p>	<p style="text-align: right;">Page 13</p> <p>1 can go through them, but you think some of these 2 URLs [REDACTED] 3 [REDACTED] 4 A. What I was saying was they -- as I 5 recall, [REDACTED] 6 [REDACTED] 7 [REDACTED] 8 [REDACTED]. 9 Q. Okay. But not -- just to be clear, I 10 mean, they're not directly talking about [REDACTED]. 11 They're talking about what the need for these types 12 of features or, you know -- you understand my point. 13 I'm just trying to understand how 14 directly tied to [REDACTED] this is with respect to how the 15 [REDACTED] [REDACTED]? 16 A. As I remember, they're talking about more 17 of a macro-level feature or concept [REDACTED] 18 [REDACTED] 19 [REDACTED] 20 [REDACTED] 21 Q. And you focused mostly on two features 22 for [REDACTED]. Right? We've got [REDACTED] and [REDACTED] Is that 23 fair? 24 A. Those are two of the larger things I talk 25 about in this section.</p>

4 (Pages 10 - 13)

HIGHLY CONFIDENTIAL - OUTSIDE ATTORNEYS' EYES ONLY

Page 18

1 you're rebutting with respect to [REDACTED] as you sit here
2 today?
3 MR. JANES: Object to form.
4 A. I don't recall from their two reports
5 what -- the universe of things they may have said
6 about [REDACTED] or its relation to [REDACTED] or other
7 architectures, going from memory.
8 Q. So would it surprise you that [REDACTED], that
9 does not appear anywhere in Dr. Kennedy's report?
10 A. I guess I -- I don't have an opinion on
11 that one way or the other.
12 Q. Would it surprise you?
13 A. I don't know that it would surprise me or
14 not.
15 Q. Okay. And what about that Professor
16 Posener, to the extent he mentions any future
17 versions of ARM, he simply says that there was a
18 [REDACTED]
19 [REDACTED] Would it surprise you that that is his only
20 mention of [REDACTED] in his report?
21 A. I -- I would give a similar answer.
22 Q. Would it surprise you that neither of
23 these experts have talked about any of the technical
24 features [REDACTED]
25 MR. JANES: Object to form.

Page 19

1 A. They talked a -- a lot about a lot of
2 technical features. I don't remember of the
3 universe of technical things they talked about which
4 of those would overlay with [REDACTED] or not.
5 Q. And you understand that [REDACTED]
6 [REDACTED]. Right?
7 A. That's my understanding, that it is
8 still -- [REDACTED].
9 Q. You say in your report that the [REDACTED] and
10 the [REDACTED]. What is your basis for
11 that statement? It's at Paragraph 378, if that's
12 helpful.
13 A. Thanks.
14 Right. So as I talked about in this
15 section, these are two features that [REDACTED]
16 [REDACTED]
17 [REDACTED]
18 [REDACTED]
19 [REDACTED]
20 [REDACTED]
21 [REDACTED]
22 [REDACTED]
23 [REDACTED]
24 [REDACTED]
25 [REDACTED]

Page 20

1 [REDACTED]
2 [REDACTED]
3 [REDACTED]
4 [REDACTED]
5 [REDACTED]
6 Q. And these features in a -- in a different
7 way -- I mean, [REDACTED]
8 [REDACTED] But these
9 features were present in [REDACTED]. Right?
10 A. I would say they were, as I recall,
11 features in [REDACTED] that had [REDACTED] as a name or [REDACTED] and
12 sort of as a -- maybe in a more rudimentary way
13 addressed these concepts. [REDACTED]
14 [REDACTED]
15 [REDACTED]
16 [REDACTED]
17 [REDACTED]
18 [REDACTED]
19 [REDACTED]
20 Q. Right. I mean, I -- [REDACTED]
21 [REDACTED]
22 [REDACTED] -- the
23 [REDACTED] and the [REDACTED] and -- and [REDACTED]. Right? Would you
24 agree with that?
25 A. I guess the -- I'm not sure I

Page 21

1 would use -- I would use the word "extensions" more
2 as --
3 Q. I guess the -- the name itself is an
4 extension. Right?
5 A. In -- in name, yes --
6 Q. Okay. So --
7 A. -- [REDACTED]
8 [REDACTED]
9 [REDACTED]
10 Q. And there's [REDACTED]
11 [REDACTED]. Correct?
12 A. [REDACTED]
13 [REDACTED]
14 [REDACTED]
15 [REDACTED]
16 [REDACTED]
17 [REDACTED]
18 [REDACTED]
19 Q. [REDACTED]
20 [REDACTED]
21 [REDACTED] Is that based on the slide
22 deck that you -- the materials that -- that Arm has
23 on the [REDACTED]?
24 A. It would be based on the materials that
25 I've cited in this section, and peppered throughout,

6 (Pages 18 - 21)

HIGHLY CONFIDENTIAL - OUTSIDE ATTORNEYS' EYES ONLY

Page 22	Page 24
<p>1 there are things like concepts are presented that</p> <p>2 couldn't be handled by, for instance, the [REDACTED] --</p> <p>3 I'll call it V1 just to make things clear -- and a</p> <p>4 much more robust solution that these slides talk</p> <p>5 about for things like the V2 as well as some of the</p> <p>6 I would say less technical literature like the --</p> <p>7 the Biden administration papers and so forth.</p> <p>8 Q. Okay. But to be clear, that's based on</p> <p>9 largely when it -- specific to [REDACTED], it's based</p> <p>10 largely on the slides that you cite. There's a deck</p> <p>11 that you cite to in this section and then testimony</p> <p>12 from -- from Arm witnesses. Is that fair?</p> <p>13 A. I would -- I would say in fair that it's</p> <p>14 the -- the material cited in this section, the</p> <p>15 various deposition transcripts, my conversation with</p> <p>16 Mr. Grisenthwaite, confirming things. That's the</p> <p>17 large body of this -- this section.</p> <p>18 Q. Do you know what the major features were</p> <p>19 that were introduced in V9 when it went from -- when</p> <p>20 the architecture went from V9 -- or sorry -- V8 to</p> <p>21 V9?</p> <p>22 A. I don't recall looking or citing to</p> <p>23 similar-in-style materials that I have in this Arm</p> <p>24 [REDACTED] section explicitly calling out the delta from V8</p> <p>25 to V9. Maybe it's in my report, but I don't recall.</p>	<p>1 timeline.</p> <p>2 Q. Do you know what it -- what does it do as</p> <p>3 a feature?</p> <p>4 A. If I'm remembering the acronym right --</p> <p>5 and I may not be, and if it's in my report, feel</p> <p>6 free to point me there -- [REDACTED]</p> <p>7 [REDACTED]</p> <p>8 [REDACTED]</p> <p>9 [REDACTED]</p> <p>10 [REDACTED]</p> <p>11 [REDACTED]</p> <p>12 [REDACTED]</p> <p>13 [REDACTED]</p> <p>14 [REDACTED]</p> <p>15 Q. And sorry, I think I asked you this, but</p> <p>16 do you recall when this was introduced?</p> <p>17 A. I don't. There's been a -- a number of</p> <p>18 things like Arm NEON and various flavors of -- of</p> <p>19 SIMD instructions with Arm over the years. I -- I</p> <p>20 don't recall which was introduced when.</p> <p>21 Q. Do you know how it differs from [REDACTED]</p> <p>22 A. I don't recall the specifics of a delta</p> <p>23 between the two one way or the other from memory.</p> <p>24 Q. How important in your opinion is [REDACTED]</p> <p>25 [REDACTED]?</p>
Page 23	Page 25
<p>1 Q. Okay. As you -- as you sit here, do you</p> <p>2 know what the significant technological changes were</p> <p>3 going from V8 to V9?</p> <p>4 A. I recall looking at some roadmap slides</p> <p>5 and things of that nature and other technical</p> <p>6 materials, but from memory, I don't recall what Arm</p> <p>7 may have listed at that transition in the timeline,</p> <p>8 if it was related to 64-bit functionality and other</p> <p>9 stuff. I -- I don't recall the whole picture from</p> <p>10 memory.</p> <p>11 Q. Did you consider that in opining on the</p> <p>12 [REDACTED]</p> <p>13 A. I would say I don't recall looking at, in</p> <p>14 my Section 14, the delta from, say, Arm V8 to V9</p> <p>15 or -- or what, you know, [REDACTED]</p> <p>16 [REDACTED]</p> <p>17 [REDACTED]</p> <p>18 Q. Do you know what [REDACTED] is, the feature</p> <p>19 [REDACTED]</p> <p>20 A. I -- I'm not going to remember the name,</p> <p>21 if I recall vector, extensions or flavor of that --</p> <p>22 Q. Do you know --</p> <p>23 A. -- based on the acronym.</p> <p>24 Q. Do you know when that was introduced?</p> <p>25 A. I'd have to go back and look at the</p>	<p>1 MR. JANES: Object to form.</p> <p>2 A. I don't have an [REDACTED] reference in front</p> <p>3 of me. To the extent it pertains to like [REDACTED]</p> <p>4 [REDACTED]</p> <p>5 [REDACTED]</p> <p>6 [REDACTED]</p> <p>7 [REDACTED]l.</p> <p>8 Q. Did you look at what the changes were</p> <p>9 between the ARM ISA V7 and V8?</p> <p>10 A. There may be materials cited in my report</p> <p>11 that relate to that. I don't recall being asked to</p> <p>12 have a specific section detailing a technical delta</p> <p>13 between the two.</p> <p>14 Q. And that -- that wasn't something you</p> <p>15 relied on, right, for rendering your [REDACTED] opinion?</p> <p>16 A. I -- I don't recall that being a part of</p> <p>17 my discussion, no.</p> <p>18 (Exhibit 2 was marked.)</p> <p>19 Q. I'm going to show you what's been marked</p> <p>20 as Exhibit 2.</p> <p>21 A. Thank you. Thanks.</p> <p>22 MS. NYARADY: For the record this is</p> <p>23 a slide deck from Arm. [REDACTED]</p> <p>24 [REDACTED] It says October 2024 is the date.</p> <p>25 And it's got Richard Grisenthwaite and Martin</p>

7 (Pages 22 - 25)

HIGHLY CONFIDENTIAL - OUTSIDE ATTORNEYS' EYES ONLY

Page 26

1 Weidmann's name on it. The Bates numbers are Arm
2 QC02771168 through 99.
3 Q. This is the -- the slide deck, right,
4 that you cite to repeatedly in the [REDACTED] section and
5 also have multiple screenshots from. Right?
6 A. I'm just confirming that. That looks
7 like this is one of the -- the slide decks in my
8 materials, yes.
9 Q. Do you see another one? I only see this
10 one. You said it's one of the slide decks?
11 A. I was looking at my materials considered.
12 Q. Sorry I'm focused on what you actually
13 relied on in -- in the [REDACTED] section.
14 A. (Pause.)
15 So I see this presentation. It looks
16 like there may be another cited in my Paragraph 389
17 for the Bates ending 1151. I'm just continuing
18 through this section.
19 It looks like in terms of Bates number
20 cited material, those are the two I use in this
21 section.
22 Q. Perfect. Thank you.
23 So what -- back to what is Exhibit 2.
24 You understand that this was a marketing-type deck
25 presented to Qualcomm for Arm to -- [REDACTED]

Page 27

1 [REDACTED]. Right?
2 A. Let me take a minute to refresh myself.
3 (Pause.)
4 So I guess I see that this is a highly
5 technical presentation [REDACTED]. I
6 guess I don't -- maybe you can refresh me. I don't
7 see Qualcomm mentioned in the slide decks
8 explicitly.
9 Q. Well, I'm not sure if Qualcomm is
10 mentioned but I guess you also cite to testimony, I
11 think, involving this.
12 Let me -- let me just make the
13 representation that this slide deck was presented to
14 Qualcomm. I mean, do you have any reason to doubt
15 that?
16 A. I don't have a reason one way or the
17 other, no.
18 Q. I mean, did you talk to Mr. Grisenthwaite
19 about this deck?
20 A. About concepts in here, I don't recall
21 this deck being -- sort of being presented or
22 anything in that meeting, no.
23 Q. Okay. Did you talk to anyone about this
24 deck in preparing your report?
25 A. The deck explicitly, I would have

Page 28

1 reviewed in writing the report. I didn't take
2 meetings with, for instance, an engineer at Arm or
3 something in discussing it.
4 Q. And the deck has a date of October 2024
5 on the front. Correct?
6 A. That's right.
7 Q. Did you ask for a more current version of
8 this deck when you were doing your analysis given
9 that it's about a year old now?
10 A. I -- I don't recall asking for a more
11 current version of it. I don't recall
12 Mr. Grisenthwaite mentioning that or that any of the
13 concepts we discussed were out of date in any way.
14 Q. Okay. But as you testified, you didn't
15 specifically talk about this deck with him. Right?
16 A. I don't recall this particular -- perhaps
17 in that conversation it wouldn't have been
18 Bates-labeled. But I don't remember this specific
19 slide presentation being, you know, being shown or
20 explicitly discussed.
21 Q. Did you ask for any materials that were
22 current as of the time of your report in terms of --
23 in terms of [REDACTED]
24 MR. JANES: Object to form.
25 A. I don't recall. I -- I guess I was using

Page 29

1 what my understanding was were the most current
2 documents that had been produced in this matter.
3 Q. And you -- okay. So you were -- you were
4 just relying on whatever had been produced and not
5 asking for updated materials. Do I have that right?
6 MR. JANES: Object to form.
7 A. Oh, I mean, I'm sure at various points
8 along the way in working up to my report, I was
9 asking for -- as is generally the case, asking for
10 an update on this type of document or that type of
11 document kind of thing.
12 I will note, though, whether I had asked
13 for that about this specific document, I don't
14 recall. However, the URLs I cite in this section
15 specifically to the various developer Arm materials
16 in terms of concepts seem to be in line with what
17 was -- -- what was presented in this Exhibit 2.
18 Q. Okay. But we already established that
19 those URLs while they're talking about -- generally
20 about the same subject matter, they are not specific
21 to [REDACTED] Right?
22 A. That -- I'm not sure how to answer that
23 question. So they're talking about technical
24 features in computers, let's say. I don't recall
25 from memory that those URLs are saying, hey, we're

8 (Pages 26 - 29)

HIGHLY CONFIDENTIAL - OUTSIDE ATTORNEYS' EYES ONLY

<p style="text-align: right;">Page 30</p> <p>1 [REDACTED] [REDACTED] as sort of a public-facing 2 thing. However a number of those concepts are 3 specific to [REDACTED] in that they're in this 4 presentation. 5 Q. You mentioned when we first started 6 talking that you're also an expert in support. 7 There were probably a few other words around that, 8 that I'm not remembering. But I -- I do remember 9 you saying you're an expert with respect to [REDACTED] 10 What do you mean by [REDACTED]? 11 A. So I was referring to aspects of what -- 12 both in this matter that we're talking about today 13 as well as when designing, selling CPUs, what 14 typically constitutes aspects of support or customer 15 support or someone that may be a potential design 16 win support along the way of the engagement. 17 Q. What's the difference between [REDACTED] and 18 a -- and just technology? 19 MR. JANES: Object to form. 20 A. I'm not sure I understand the question. 21 Q. Well -- so what -- what's a [REDACTED] 22 MR. JANES: Object to form. 23 A. [REDACTED] [REDACTED] [REDACTED]</p>	<p style="text-align: right;">Page 32</p> <p>1 on those contracts. In my report as you mentioned 2 there's numerous places and contexts that the word 3 [REDACTED] or [REDACTED] come up. We'd have to be 4 more specific on that section. But I'm not offering 5 a legal opinion, strictly a technical one. 6 Q. And are you applying a legal opinion in 7 any sense? Meaning did the lawyers tell you here's 8 what [REDACTED] means, here's what [REDACTED] means. 9 And that is a definition you're using or are you 10 using a technical definition? 11 A. I believe I'm using a technical 12 definition. I don't recall having a -- using a 13 technical definition in responding to statements 14 that Dr. Kennedy and Mr. Posener made. I don't 15 recall having a section in my report on legal 16 definitions that I would be using throughout the 17 report. 18 Q. So to the best of your understanding, are 19 you using the term '[REDACTED]' and '[REDACTED]' the 20 same way that Dr. Kennedy or professor Posener are? 21 A. We'd have to go back and look at a 22 specific example. But in a general sense I'm 23 referring to certain of the technical arguments 24 they've made or technical positions they've taken in 25 a few different areas and responding to those with</p>
<p style="text-align: right;">Page 31</p> <p>1 [REDACTED] 2 [REDACTED] 3 [REDACTED] 4 [REDACTED] 5 Q. So when you use the term [REDACTED] 6 and [REDACTED] in your report, you are not using a 7 legal definition under the contract for those terms. 8 Correct? 9 A. That I'm not offering a legal 10 interpretation of those contracts. I'm talking 11 about technology -- so for lack of a better way to 12 put it, technology with like a lower "T" versus the 13 technology that may be legally referenced in -- in 14 the licensing agreements. 15 Q. So I guess I'm -- I'm a little confused. 16 You're talking now about technology. I was talking 17 about [REDACTED] and [REDACTED]. Let's try this 18 again. 19 When you use the term '[REDACTED]' and 20 when you use the term '[REDACTED]' in your report which 21 you do repeatedly, are you using those in a legal 22 sense. Meaning a legal definition under the 23 contract? 24 A. I -- I guess I would answer that, that 25 I'm not offering opinions on -- on -- legal opinions</p>	<p style="text-align: right;">Page 33</p> <p>1 a -- with a technical response. 2 Q. In a technical sense, what is the 3 difference between a [REDACTED] and [REDACTED] as you 4 use those terms in your report? 5 A. (Pause.) 6 So I'm going back roughly to my Page 54. 7 And here I'm discussing the Arm V9-A architecture 8 spec and -- 9 Q. This is the contract? 10 A. It looks like that's what it's 11 referencing. And one of the things mentioned is 12 something, the Arm V9-A architecture specification. 13 And as I recall, this may be something, like in a 14 technology sense, a [REDACTED] if I'm giving 15 someone the spec for -- an architecture spec for a 16 CPU. [REDACTED] would -- through a certain channel 17 that perhaps a customer is given access to. 18 Support -- 19 Q. Isn't that a legal definition? I mean, 20 you're pointing me to the contract and saying that 21 it's a [REDACTED] and then you're talking about the 22 manner in which it's delivered. Are -- is it your 23 testimony that the manner of delivery will change 24 the definition of a technical definition of 25 [REDACTED]?</p>

9 (Pages 30 - 33)

HIGHLY CONFIDENTIAL - OUTSIDE ATTORNEYS' EYES ONLY

<p style="text-align: right;">Page 62</p> <p>1 respect to Nuvia, Qualcomm, or Arm?</p> <p>2 A. I don't believe I was asked to look at</p> <p>3 that, no.</p> <p>4 Q. You did not look at the CP- -- any CPU</p> <p>5 code that existed -- well, strike that.</p> <p>6 At the time of acquisition, Nuvia was</p> <p>7 working on -- on CPUs. Right?</p> <p>8 A. That's my general understanding.</p> <p>9 Q. Did you review any of the code as it</p> <p>10 existed as of the time of acquisition?</p> <p>11 A. If you're asking about, like, RTL code</p> <p>12 that would implement the CPUs, and to your question</p> <p>13 at the time of acquisition, I did not look at that.</p> <p>14 Q. Did you look at any RTL code of any</p> <p>15 Qualcomm custom CPUs?</p> <p>16 A. In -- well, I guess I'll answer in two</p> <p>17 parts. In relation to the time of Nuvia</p> <p>18 acquisition, no. I talk about various aspects of</p> <p>19 the Qualcomm CPUs and designs. But for the points I</p> <p>20 address, I didn't need to look at RTL code. But,</p> <p>21 no, I did not explicitly look at RTL in this matter.</p> <p>22 Q. Would you agree with me that the RTL code</p> <p>23 is the best evidence of the design of the CPU?</p> <p>24 A. I would say it's evidence of the design.</p> <p>25 And if that's what's used to conceptually send to</p>	<p style="text-align: right;">Page 64</p> <p>1 It sounds like you're -- I'll start over.</p> <p>2 I'm in Paragraph 31 and it sounds like</p> <p>3 you're referring to that second sentence that the</p> <p>4 jury concluded that: Qualcomm had not breached the</p> <p>5 Arm-Nuvia ALA. And that Qualcomm's custom CPU</p> <p>6 designs that were based on the Nuvia CPU designs</p> <p>7 were licensed under the Qualcomm ALA.</p> <p>8 Q. And so are -- are you -- is that a "yes"</p> <p>9 that you're agreeing with me that the jury found</p> <p>10 that the Qualcomm CPUs that incorporated Nuvia</p> <p>11 designs were covered by the Qualcomm ALA?</p> <p>12 A. That's my understanding, yes. It sounds</p> <p>13 like we're saying the same thing.</p> <p>14 Q. You're not attempting to substitute your</p> <p>15 judgment for that of the jury's, are you?</p> <p>16 A. On that particular point I'm not offering</p> <p>17 an opinion one way or the other.</p> <p>18 Q. So what is the relevance of your section</p> <p>19 discussing -- you have a title here on Page 155.</p> <p>20 It says: The Phoenix-based and</p> <p>21 Pegasus-based cores are Nuvia-based cores.</p> <p>22 What is the relevance of that section to</p> <p>23 our case --</p> <p>24 A. Okay.</p> <p>25 Q. -- in light of the jury verdict?</p>
<p style="text-align: right;">Page 63</p> <p>1 the fab to manufacture a device, would be the</p> <p>2 description of how it works, in addition to</p> <p>3 engineering manuals and other things.</p> <p>4 Q. But wouldn't you agree that the actual</p> <p>5 RTL that is sent to the -- to the fab would be the</p> <p>6 best evidence of what is actually in that CPU and</p> <p>7 how it functions?</p> <p>8 A. I would say it would be evidence of it.</p> <p>9 I don't know that I would put a qualifier as "best."</p> <p>10 But it would be the direction of -- the intention of</p> <p>11 what it comes out of the fab and the specifications</p> <p>12 of how it works. Assuming everything went right.</p> <p>13 Q. Do you understand that this issue was</p> <p>14 decided at -- in the trial of December of 2024.</p> <p>15 Right? Sorry, the issue about whether or not</p> <p>16 Qualcomm's ALA covers what you call Nuvia-based</p> <p>17 CPUs?</p> <p>18 A. My understanding was that was one of</p> <p>19 the -- one of the items that the jury ruled on.</p> <p>20 Q. And the jury found that Qualcomm-custom</p> <p>21 CPUs that incorporated Nuvia designs were covered by</p> <p>22 the Qualcomm ALA. Correct?</p> <p>23 A. I'm just going to quickly go back to my</p> <p>24 Page 11.</p> <p>25 (Pause.)</p>	<p style="text-align: right;">Page 65</p> <p>1 A. One moment.</p> <p>2 (Pause.)</p> <p>3 So this section talks about, just as you</p> <p>4 were asking, these various Nuvia-based cores and</p> <p>5 ties into, at various places in my report, the</p> <p>6 discussion of various verification -- CPU</p> <p>7 verification or test functionality that Qualcomm</p> <p>8 would have based on prior CPU designs that were</p> <p>9 brought up, and as I refer to, "taped out."</p> <p>10 And the ways that -- as I refer to in my</p> <p>11 report, that can be used as a -- for -- if they're</p> <p>12 trying to perform testing of a new design, they</p> <p>13 would have a starting block to -- or a starting</p> <p>14 place to start from, rather than starting from</p> <p>15 scratch, conceptually.</p> <p>16 Q. So do I understand that this is a</p> <p>17 high-level feature issue that -- so then you're</p> <p>18 tying it to the ability to leverage prior work on</p> <p>19 prior cores, so future cores with respect to the</p> <p>20 OOB? Is that what you're saying?</p> <p>21 A. I'm not sure I fully understood the</p> <p>22 question.</p> <p>23 Q. Yeah, I'm not sure I fully understand</p> <p>24 your answer. Maybe that's the problem.</p> <p>25 Tell me again why you think this section</p>

17 (Pages 62 - 65)

HIGHLY CONFIDENTIAL - OUTSIDE ATTORNEYS' EYES ONLY

<p style="text-align: right;">Page 66</p> <p>1 is relevant to any issue in our case?</p> <p>2 A. That -- and if we go back to my testing</p> <p>3 section, if I'm --</p> <p>4 Q. I'm sorry. To your testing section?</p> <p>5 A. I'm sorry. My background of -- I guess</p> <p>6 it would be in the technology background and in the</p> <p>7 CPU core design verification process section.</p> <p>8 But the idea that if you have a</p> <p>9 functioning CPU, for example, that you have run your</p> <p>10 compliance suite on, and you're expanding on it to</p> <p>11 add new functionality, you can base your validation</p> <p>12 on the prior generation as a starting point, and</p> <p>13 things like that.</p> <p>14 And so the discussion, at a high level,</p> <p>15 of the Nuvia-based cores in this Section 13 relates</p> <p>16 to various people at, I believe, Qualcomm agreeing</p> <p>17 that those prior existing validated cores were being</p> <p>18 used in these future-facing products.</p> <p>19 Q. So I'm still confused because you're</p> <p>20 talking about leveraging prior ACK work that</p> <p>21 Qualcomm did on its future generations of custom</p> <p>22 cores. Right?</p> <p>23 A. I would say prior work that Qualcomm had</p> <p>24 done with the ACK.</p> <p>25 Q. Okay. So it's Qualcomm prior work</p>	<p style="text-align: right;">Page 68</p> <p>1 next generation Qualcomm custom core?</p> <p>2 MR. JANES: Object to form; asked and</p> <p>3 answered.</p> <p>4 A. The point -- at least one of the points</p> <p>5 I'm making is these cores were already established</p> <p>6 and verified and used. Whether we put a Nuvia or, I</p> <p>7 guess, a Qualcomm sticker on that.</p> <p>8 And that going forward, the basis of that</p> <p>9 use of the ACK suite, for example, can be leveraged</p> <p>10 going forward.</p> <p>11 Q. You're aware, right, that Nuvia never</p> <p>12 completed a CPU?</p> <p>13 A. My general understanding is that -- and</p> <p>14 that may be addressed in my report -- that the</p> <p>15 various of the designs may not have been fabricated.</p> <p>16 Q. Okay. And you're aware, right, that</p> <p>17 Nuvia never verified, under the ACK or otherwise, a</p> <p>18 CPU core. Right?</p> <p>19 A. Is there an area where I talk about that</p> <p>20 in my report?</p> <p>21 Q. Are you aware of whether Nuvia ever</p> <p>22 verified a CPU core?</p> <p>23 A. I don't recall discussing in my report</p> <p>24 what -- when Nuvia was pre-acquisitioned, the status</p> <p>25 of their internal verification process.</p>
<p style="text-align: right;">Page 67</p> <p>1 involving the ACK. And you're saying -- and, of</p> <p>2 course, we have, like, a big disagreement in the</p> <p>3 case over this, but your opinion is that you can</p> <p>4 leverage that prior work for then, like, the next</p> <p>5 generation or the next custom CPU. Right?</p> <p>6 A. As a concept. And I believe at various</p> <p>7 places the Qualcomm -- I think Arm engineers -- or</p> <p>8 Qualcomm engineers talk about small deltas between</p> <p>9 things and so forth.</p> <p>10 Q. And so I understand that opinion. I've</p> <p>11 seen that part of your report. What does that have</p> <p>12 to do with Nuvia?</p> <p>13 A. That the -- what I'm mentioning are some</p> <p>14 of these CPU cores that we are talking about</p> <p>15 happened to come from Nuvia and were integrated</p> <p>16 effectively into Qualcomm, and being used in the</p> <p>17 designs that we're talking about.</p> <p>18 Q. Why does that matter? If we're talking</p> <p>19 about a Qualcomm custom core going to another</p> <p>20 Qualcomm custom core, you're talking about the</p> <p>21 overlap and the continuation of technology between</p> <p>22 those two custom cores and how you can leverage</p> <p>23 that, right, in verification.</p> <p>24 What does Nuvia have to do with how</p> <p>25 much -- how similar a Qualcomm custom core is to its</p>	<p style="text-align: right;">Page 69</p> <p>1 Q. So you're not relying on that in any way?</p> <p>2 A. Perhaps there's a section in my report,</p> <p>3 but I don't recall so. I'm referring more to as</p> <p>4 these -- what I refer to as NCC or Nuvia cores as</p> <p>5 part of Qualcomm and how they're being used.</p> <p>6 Q. I guess I still am struggling with what</p> <p>7 relevance -- you know, you use the word "Nuvia"</p> <p>8 repeatedly throughout your report. Right? It's</p> <p>9 like you're making a point that these have</p> <p>10 Nuvia-based cores. You keep saying it.</p> <p>11 What is the relevance of that when your</p> <p>12 argument with respect to verification is basically</p> <p>13 Qualcomm verified a certain core, it carries forward</p> <p>14 certain features. And so in your opinion you think</p> <p>15 that makes it easier to live without the OOB.</p> <p>16 What does Nuvia have to do with that</p> <p>17 opinion? And you can see how from our perspective</p> <p>18 it just seems like you're trying to drag the prior</p> <p>19 case into this case. Right?</p> <p>20 So I'm trying to understand why you're</p> <p>21 talking so excessively about Nuvia in this report</p> <p>22 when Nuvia never completed a core and never verified</p> <p>23 a core.</p> <p>24 MR. JANES: Object to form;</p> <p>25 mischaracterizes; asked and answered.</p>

18 (Pages 66 - 69)

HIGHLY CONFIDENTIAL - OUTSIDE ATTORNEYS' EYES ONLY

<p>Page 78</p> <p>1 I'm just skimming the ACK patches section</p> <p>2 before I answer you.</p> <p>3 Okay. So with respect to the OOB, I'll</p> <p>4 go -- point us back to my Paragraph 174. And that</p> <p>5 Arm didn't provide the OOB packages for these four</p> <p>6 CPUs, at least in part because Arm believed that at</p> <p>7 the time these CPUs incorporated was unlicensed code</p> <p>8 developed by Nuvia. So I guess that -- that's in</p> <p>9 relation to the OOB side of your question.</p> <p>10 On the ACK patches, as we discussed</p> <p>11 earlier -- and I don't see in my ACK patches section</p> <p>12 starting on 85. I cite that Footnote 98 on Page 86,</p> <p>13 but that the ACK was provided, as I recall, to</p> <p>14 Qualcomm via those quarterly releases we discussed</p> <p>15 earlier.</p> <p>16 Q. Right. But I asked about patches. Why</p> <p>17 don't you look at 205. That might help you.</p> <p>18 Why did Arm stop providing patches to</p> <p>19 Qualcomm?</p> <p>20 A. So in -- in addition to what I said a</p> <p>21 moment ago, the -- in Paragraph 205, [REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>Page 79</p> <p>1 Q. Okay. And the fact that Arm thought</p> <p>2 there was unlicensed Nuvia developments in those</p> <p>3 cores, that's the issue that Arm lost on at the</p> <p>4 December 2024 trial. Right?</p> <p>5 MR. JANES: Object to form.</p> <p>6 A. As we talked about earlier, my</p> <p>7 understanding is that the jury found that -- again,</p> <p>8 I'm -- I'm not offering a legal opinion -- but that</p> <p>9 there was -- they -- Qualcomm was licensed to some</p> <p>10 of these cores.</p> <p>11 Q. Okay. And is it your understanding that</p> <p>12 that's why, after the verdict in January of 2025,</p> <p>13 Arm, you know, turned back on the spigot and started</p> <p>14 providing OOBs and patches again? Correct?</p> <p>15 A. As I recall in the Footnote 98, it states</p> <p>16 that, third line down: Arm sent a letter to</p> <p>17 Qualcomm stating that, quote, Arm intends to provide</p> <p>18 support for the Nuvia CPUs, including support and</p> <p>19 verification services pending this litigation</p> <p>20 between the parties.</p> <p>21 So they're, it sounds like, related in</p> <p>22 time.</p> <p>23 Q. So you -- you never talked to anyone</p> <p>24 about why Arm began again in 2025 to provide ACK</p> <p>25 patches and -- and OOBs to Qualcomm?</p>	<p>Page 80</p> <p>1 A. (Pause.)</p> <p>2 I don't recall, I think you were asking,</p> <p>3 having a conversation with someone. Having a</p> <p>4 conversation as to internally at Arm why the reason</p> <p>5 was that at that point in time -- I'll go back to --</p> <p>6 to Footnote 98 that Arm said, quote, Arm intends to</p> <p>7 provide support for the Nuvia CPUs including support</p> <p>8 and verification services.</p> <p>9 Q. Okay. So you don't recall any</p> <p>10 conversation that you've had surrounding why Arm</p> <p>11 intended to provide support starting in January</p> <p>12 2025. Is that correct?</p> <p>13 A. From my recollection, I -- I don't recall</p> <p>14 having that conversation with someone saying here's</p> <p>15 our reasoning or something like that.</p> <p>16 Q. Okay. And that was not important at all</p> <p>17 to your analysis so you -- you never asked that</p> <p>18 question. Is that fair?</p> <p>19 A. I went based on the facts and my</p> <p>20 understanding of what was the outcome of that first</p> <p>21 trial and then Arm -- Arm and Qualcomm's respective</p> <p>22 behavior.</p> <p>23 Q. Okay. So your assumption was that OOBs</p> <p>24 and patches began to be supplied again in early 2025</p> <p>25 because of the jury verdict?</p> <p>Page 81</p> <p>1 A. I wouldn't say it was an assumption. I</p> <p>2 mean, Arm sent this letter to Qualcomm stating that</p> <p>3 pending this certain litigation between the parties,</p> <p>4 here is what Arm intends to do.</p> <p>5 Q. Okay. So it was your understanding that</p> <p>6 Arm was beginning to provide the OOBs and patches in</p> <p>7 January of 2025 because of the jury verdict?</p> <p>8 A. I -- I would see that the footnote says</p> <p>9 pending the jury verdict, but it's my understanding</p> <p>10 it was certainly in relation to that.</p> <p>11 Q. Did you write this expert report</p> <p>12 yourself?</p> <p>13 A. Yes.</p> <p>14 Q. All of it?</p> <p>15 A. I probably had assistance with, as usual,</p> <p>16 things like a legal background or formatting. The</p> <p>17 first draft and everything was certainly mine.</p> <p>18 They're all my opinions.</p> <p>19 Q. When did you start writing it?</p> <p>20 A. Over the summer. Maybe -- it -- it would</p> <p>21 probably be -- it would be reflected in my invoices,</p> <p>22 but if -- if this was early September when it was</p> <p>23 finished, maybe June or July would have been the</p> <p>24 first draft.</p> <p>25 Q. You mentioned a conversation with -- with</p>
--	---

21 (Pages 78 - 81)

HIGHLY CONFIDENTIAL - OUTSIDE ATTORNEYS' EYES ONLY

Page 82	Page 84
<p>1 Mr. Grisenthwaite. You also refer in here to a 2 conversation with Mr. Agrawal. 3 You remember that? 4 A. Yes. 5 Q. Other than Mr. Grisenthwaite and 6 Mr. Agrawal, did you speak to anyone else at the Arm 7 for the purposes of preparing this report? 8 A. I don't -- not that I recall, no. 9 Q. I know we already talked about the 10 conversation with Mr. Grisenthwaite. 11 With respect to Mr. Agrawal, how many 12 times did you speak with him? 13 A. I think it was just the one time. If I 14 remember, he was headed out the door on a sabbatical 15 or something so we talked for -- it was late on a 16 Friday night or something like that. I think it was 17 just the one time. 18 Q. I would like a sabbatical. 19 A. I would, too. 20 Q. Do you recall when you spoke with 21 Mr. Agrawal? 22 A. Maybe a week or so before the report was 23 filed. 24 Q. And do you recall approximately how long 25 that conversation was?</p>	<p>1 Q. Have you ever verified an Arm-compliant 2 CPU? 3 A. In terms of doing the hands-on 4 verification for Arm specifically, I have not. For 5 other architectures, yes. 6 Q. We -- we've been using the acronym ACK, 7 sometimes ACK (pronouncing), in -- in this 8 deposition. You understand that stands for 9 architecture compliance kit? 10 A. That's correct. 11 Q. And that's technology that's provided by 12 Arm and it's specific to the Arm architecture for 13 verification. Right? 14 A. In terms of the -- that specific tool, 15 that's my understanding. 16 Q. Okay. Do you know why Arm refused to 17 provide OOBs and ACK (pronouncing) or ACK patches 18 but continued to provide the ACK quarterly releases 19 to Qualcomm during the period that we've been 20 talking about? 21 A. And I guess I would just reiterate what 22 we were discussing earlier that the quarterly 23 releases are what Arm provides to the various 24 partners. And that the -- when you were asking 25 about the specific ACK patches or OOB, that upon Arm</p>
Page 83	Page 85
<p>1 A. Maybe an hour. 2 Q. Did you take any notes during your 3 conversation with either Mr. Grisenthwaite or 4 Mr. Agrawal? 5 A. I don't remember. It was more of a -- 6 two engineers are technical people, kind of 7 discussing or talking, rather than a -- you know, 8 like a formal Q and A or something. 9 Q. What did you discuss with Mr. Agrawal? 10 A. At a high level, it was -- and I'm sure 11 it's cited in my report -- concepts around some of 12 the ACK functionality or maybe things related to his 13 team or how people might be using it, things like 14 that. Probably a bit of discussion around OOB as 15 well. 16 Q. Have you ever designed an Arm-compliant 17 CPU? 18 A. In an industry role, I have not done that 19 for Arm specifically. Other CPUs, yes. 20 Q. Okay. You said in an industry role. 21 Have you ever done it in any other role? 22 A. In terms of designing the CPU itself, no. 23 I've worked with Arm in a lot of different 24 capacities, but in designing one, now. I've worked 25 in the reverse engineering of them, though.</p>	<p>1 discovering the use of the Nuvia material, they 2 decided to not provide that support. 3 Q. So if I'm understanding you correctly, 4 it's your testimony that Arm continued to provide 5 things that it would provide to all of its licensees 6 but things that were specific to Qualcomm, it 7 stopped providing. Is that the distinction you're 8 making? 9 A. That sounds a little broader than what I 10 was saying. I was just saying that Arm continued to 11 provide its quarterly ACK releases which Arm had 12 access to. And at one point in time stopped 13 providing the ACK patch support in OOB as we 14 discussed. 15 Q. And do you -- I -- I guess my question is 16 do you know why, why would Arm provide the ACK 17 quarterly releases to Qualcomm but withhold the OOB 18 and the ACK patches during that period? 19 A. It sounds to me like that may -- that may 20 be something that's legal related to the licensing 21 agreement that I -- that I'm not offering opinions 22 on. 23 Q. So you didn't -- nobody has said anything 24 to you about why -- you get my point, though. 25 Right? If they think that there was something</p>

22 (Pages 82 - 85)

HIGHLY CONFIDENTIAL - OUTSIDE ATTORNEYS' EYES ONLY

<p style="text-align: right;">Page 98</p> <p>1 AC -- if you're asking geographically, I don't know 2 that I mention where, for example, the ACK quarterly 3 release team, where their team lead is located or 4 otherwise. But they're communicating through these 5 different mechanisms, performing different roles 6 within the company. 7 Q. Do you know if the same team -- well, let 8 me strike that. 9 What team develops -- or designs the ACK 10 as you've defined it? Obviously, you know, our 11 position is that these patches are part of the ACK. 12 I understand you're not agreeing with 13 that. But whether -- in your report, when you talk 14 about the ACK distinct from patches, who designs 15 that and develops it? 16 A. In Paragraph 208, I guess -- it may be 17 the third line from the bottom. It's the Arim ATG 18 group by the PDH, whether there is -- I guess to 19 answer another way, I don't know that I've listed 20 out an org chart where that team may sit or what 21 their -- if there may be a different name associated 22 with them. 23 Q. Do you know for certain whether the team 24 that works on the patches is different than the ATG 25 group?</p>	<p style="text-align: right;">Page 100</p> <p>1 through this Causeway communication means. 2 Q. Okay. Have you ever seen the ACK? 3 A. What do you mean "seen it"? 4 Q. Do you know what the ACK is? 5 A. I've seen the documentation related to 6 it, as well as I believe scripts and functionality 7 and spreadsheets related to it. And I think a 8 number of documents that included things like -- it 9 may have had portions of source codes, like the Unit 10 Test C or assembly source code results -- results 11 vectors, things like that, results of runs from the 12 ACK center. 13 Q. Have you ever seen the complete ACK 14 source code package? I mean, it's not cited in your 15 report as a material considered. I just want to 16 confirm you haven't seen the actual package of 17 source code that's delivered to a partner? 18 A. I had -- 19 MR. JANES: Objection; 20 mischaracterizes. 21 A. In this matter I didn't download, for 22 example, a version of the ACK. I used all of the 23 ACK-related materials describing how it worked, and 24 the way that it works similar to a number of other 25 compliance or testing kits that I've used in the</p>
<p style="text-align: right;">Page 99</p> <p>1 A. In terms of organization or org chart, I 2 don't know, but what I'm pointing to is there are 3 distinctly different roles occurring here, which are 4 communicated to partners via different websites or 5 portals and a different means of communication, one 6 being made one-to-many, available-to-all, and one 7 being one-to-one as sort of a private communication. 8 Q. Okay. But that's not what we're talking 9 about. Right? My original question was you keep 10 saying "India," like that somehow is meaningful in 11 this analysis. And this whole dialogue started by 12 me saying what is the significance of India. 13 Now you're onto how it's delivered and 14 whether it's everybody and all that, and we can get 15 to all that as well. But let's stick with India. 16 Is there any relevance to your repeated 17 mentioning of the fact that the patch group is in 18 India? 19 MR. JANES: Object to form; asked and 20 answered. 21 A. Specifically India versus somewhere else, 22 no. And perhaps these deposition transcripts I cite 23 to bring this up as well. I'm just pointing to the 24 fact that these partner-specific communications come 25 from this group in this geographical location</p>	<p style="text-align: right;">Page 101</p> <p>1 past. 2 Q. Was the ACK made available to you for 3 download? 4 A. I don't recall. I don't recall if 5 someone -- or I would say if someone else in this 6 engagement may have downloaded it -- a version of it 7 or not. 8 Q. So you just don't know if it was 9 available to you? 10 A. Available in the sense of if someone had 11 produced a license or something, I don't know. I 12 didn't need to specifically look at the scripts that 13 implement compiling a unit test via GCC to 14 understand how it worked in this matter. 15 Q. Okay. And that goes to my next question. 16 You didn't ask for -- to look at that, did you? 17 A. The actual scripts or C files, no, I 18 didn't -- I didn't need to look at that, no. 19 Q. Okay. 20 A. I didn't ask to look at it either. 21 Q. And you've never used the ACK to verify a 22 CPU. Right? 23 A. Similar answer as earlier. Similar 24 packages. I've not used the ACK specifically in 25 verifying a specific Arm CPU.</p>

HIGHLY CONFIDENTIAL - OUTSIDE ATTORNEYS' EYES ONLY

<p>Page 122</p> <p>1 was just asking whether or not you agreed with his 2 characterization -- 3 A. Okay. 4 Q. -- of the overlay. So I apologize if I 5 confused you, but Exhibit 5 is not part of the OOB 6 package and it's not related -- not the [REDACTED] 7 package. But Exhibit 4 and Exhibit 6 are both 8 listed as documents in your Paragraph 175. And my 9 understanding is that you reviewed an OOB package 10 for the [REDACTED] product. Okay. But fair enough if you 11 don't -- if you don't know. What is the quick 12 startup file, like, what is this file used for, 13 Exhibit 6? 14 A. So it's a file that if I'm an engineer, 15 my workstation is probably the first thing I would 16 look at. And just as it says, it's sort of a quick 17 guide to get up and running. It -- the second 18 section here under prerequisite says -- I won't drag 19 us through it. But it's telling you a bunch of 20 support tools you have to have installed and what 21 versions, things like that. And then it goes 22 through and tells you the engineer. How to 23 configure your test machine to run this stuff. So 24 tell it to look at this directory. Tell it here's 25 where a tool called a compiler sits. And you set up</p> <p>Page 123</p> <p>1 a work area that the framework is going to expect to 2 exist, directories, support tools, different 3 versions of things. 4 And then as we get to .4 at the bottom of 5 the second page, that looks like it's a script to 6 just make sure you've set everything upright. Kind 7 of a sanity check. .5 gives you a command to run 8 that builds a bunch of -- it looks like libraries. 9 And then .6 is how you run these ACK tests. And 10 then there's subsections. Do you want to run all 11 the tests or some set. And then various commands of 12 that nature. 13 Q. And this quick start file that was 14 provided as part of the [REDACTED] OOB is different than 15 the quick start file that is in the ACK release. 16 Right? 17 A. There -- I guess I don't recall 18 performing a comparison of those. There may be some 19 differences. For instance, some of the directory 20 paths we see here, I'm on the second page, about two 21 thirds down, it says -- where it says 22 configure_val_4. And it says sample target name. 23 And the example that this file gives is that [REDACTED] 24 nomenclature that may be customized, for example, 25 for this Qualcomm project versus the vanilla version</p>	<p>Page 124</p> <p>1 that you might get in a quarterly download or 2 something. 3 Q. Okay. And all of the steps that are 4 outlined in Exhibit 6 that you were just walking 5 through, those are all set forth in the -- the ACK 6 user guide. Right? 7 A. I don't remember from memory. But I 8 remember the user guide provides information on how 9 to get up and running to a certain level. 10 Q. So it wouldn't surprise you, would it, if 11 all of these steps are in the user guide? 12 A. I guess it wouldn't surprise me if the 13 user guide had a high level similar flow to get up 14 and running. 15 Q. Okay. 16 (Exhibit 7 was marked.) 17 Q. This has already been marked before. But 18 I'm going to mark it again just for ease of 19 reference. I'm going to mark it as Exhibit 7 for 20 this deposition. Bates-numbered QCARM_1042780 21 through -- actually it's only that one number 22 because it was a native file. Do you know what this 23 is? 24 A. I cite this -- at least in my 25 Paragraph 175. And let me go back through it. It's</p> <p>Page 125</p> <p>1 pretty dense. 2 (Pause.) 3 It looks like this is one of the results 4 or the output files that gets generated in running a 5 suite of tests. And so it's -- there's a lot of 6 information in here. 7 But you see things like the environment 8 that was used. In certain places we see, like, skip 9 entries, things like that, information on what 10 version is being used and so forth. 11 Q. So which of the OOB files is this? 12 A. (Pause.) 13 I would say this looks like a file that 14 is -- would be generated if you ran, I think, an OOB 15 or a set of tests on the AEM, for example, or on 16 your design, showing tests that it passed or skipped 17 if a feature wasn't implemented or something like 18 that. 19 Q. So as you sit here, I mean, are you 20 saying you're not sure whether this is part of the 21 OOB or something that is generated from using the 22 OOB? 23 A. Oh, I see. 24 Q. Let me ask you maybe a slightly different 25 question.</p>
---	--

32 (Pages 122 - 125)

HIGHLY CONFIDENTIAL - OUTSIDE ATTORNEYS' EYES ONLY

<p style="text-align: right;">Page 126</p> <p>1 Is this Exhibit 7, what you referred to</p> <p>2 in Paragraph 175, as one of the main components,</p> <p>3 which is a set of test results from running the</p> <p>4 listed ACK test on a reference model called the AEM?</p> <p>5 A. This -- yeah, this may be the file that's</p> <p>6 included that shows for this OOB here is what you</p> <p>7 expect running on the AEM, and these are the</p> <p>8 results.</p> <p>9 [REDACTED]</p> <p>10 [REDACTED]</p> <p>11 [REDACTED]</p> <p>12 [REDACTED]</p> <p>13 [REDACTED]</p> <p>14 [REDACTED]</p> <p>15 [REDACTED]</p> <p>16 [REDACTED]</p> <p>17 [REDACTED]</p> <p>18 [REDACTED]</p> <p>19 [REDACTED]</p> <p>20 [REDACTED]</p> <p>21 Q. Is this the failure analysis file?</p> <p>22 A. So I talk about a failure analysis file</p> <p>23 in 179. And I'm just going to continue to review</p> <p>24 your Exhibit 7.</p> <p>25 (Pause.)</p>	<p style="text-align: right;">Page 128</p> <p>1 A. So to the first question, this may be the</p> <p>2 sample target file that's mentioned in Exhibit 4,</p> <p>3 because I note the file names are largely similar,</p> <p>4 ending in [REDACTED] And the Exhibit 4 README tells you</p> <p>5 it can generate a .CSV, which is comma separated</p> <p>6 value.</p> <p>7 Q. You're looking at the front page, where</p> <p>8 it says "sample" -- "file name sample target"?</p> <p>9 A. In Exhibit 7, yes.</p> <p>10 Q. Yeah. Okay.</p> <p>11 A. And just to note, each of these -- this</p> <p>12 wall of text in this file, it looks like the</p> <p>13 different fields are comma separated.</p> <p>14 Q. And so is this -- let's call it a sample</p> <p>15 target file. Is this sample target file the same</p> <p>16 thing as what you say in your report is one of the</p> <p>17 main components, which is a reference list of ACK</p> <p>18 tests?</p> <p>19 A. I believe there I'm referring to the list</p> <p>20 of the partner-specific tests to run. And it sounds</p> <p>21 like this file that we've been talking about in</p> <p>22 Exhibit 7 is the result -- is possibly the result of</p> <p>23 running those tests on the AEM and looking at the</p> <p>24 results.</p> <p>25 Q. Okay. So this is not the same thing as</p>
<p style="text-align: right;">Page 127</p> <p>1 It looks like I've got a cite in</p> <p>2 Paragraph 179 for a failure analysis.txt file.</p> <p>3 Going from memory, I don't know that</p> <p>4 these are the same thing. My recollection is that</p> <p>5 failure analysis file tells you known issues that</p> <p>6 fail even on the AEM.</p> <p>7 Q. Okay. So this is not the failure</p> <p>8 analysis file?</p> <p>9 A. At least in terms of the Bates numbers.</p> <p>10 It looks like that failure analysis file I cite to</p> <p>11 is a different file. I don't recall from memory</p> <p>12 what it looks like inside.</p> <p>13 Q. Okay. Is it possible -- is this the</p> <p>14 sample target file?</p> <p>15 A. (Pause.)</p> <p>16 Is there a place in my report I discuss a</p> <p>17 sample target file?</p> <p>18 Q. I don't know if you used that language.</p> <p>19 It is on Exhibit 5, though, or 4. Sorry, 4.</p> <p>20 Okay. I see there's a Sample Target 2,</p> <p>21 Sub 2.</p> <p>22 A. (Pause.)</p> <p>23 Q. And I think in your report you refer to a</p> <p>24 reference list of ACK tests.</p> <p>25 Is that the same thing?</p>	<p style="text-align: right;">Page 129</p> <p>1 one of the two main components, where you say a</p> <p>2 reference list of ACK tests, but it could be the</p> <p>3 second piece here, which says: A set of test</p> <p>4 results from running the listed ACK test on the</p> <p>5 reference model?</p> <p>6 A. That this looks like it's the second</p> <p>7 component of the set of results from running those</p> <p>8 tests on the AEM.</p> <p>9 Q. Okay. And that would be results from</p> <p>10 running a subset of the ACK tests that are specific</p> <p>11 to a licensee's CPU. Correct?</p> <p>12 MR. JAMES: Object to form.</p> <p>13 A. Whether this specific file is that, I</p> <p>14 don't really know the chain of how this file was</p> <p>15 generated, but it looks like this would be the type</p> <p>16 of file you would get from running a set of tests on</p> <p>17 an AEM. And this would be the output.</p> <p>18 Q. Okay. I guess I was just trying to make</p> <p>19 the distinction. I mean, this is not running every</p> <p>20 ACK test. Right? This is a -- this is a document</p> <p>21 that is running a subset of ACK tests?</p> <p>22 A. I haven't performed that analysis, but</p> <p>23 that might not be unreasonable, just given the</p> <p>24 length of this file versus 50,000 tests or something</p> <p>25 like that.</p>

33 (Pages 126 - 129)

HIGHLY CONFIDENTIAL - OUTSIDE ATTORNEYS' EYES ONLY

<p style="text-align: right;">Page 130</p> <p>1 Q. Okay. So in the file that would be the</p> <p>2 first component, where you say "a reference list of</p> <p>3 ACK tests," typically that's a file -- well, strike</p> <p>4 that.</p> <p>5 A reference list of ACK tests, that is a</p> <p>6 component in the OOB package. Right?</p> <p>7 A. That sounds right, yes.</p> <p>8 Q. Okay. And in the absence of getting an</p> <p>9 OOB package, the licensee would be required to come</p> <p>10 up with the reference list of ACK tests on its own.</p> <p>11 Right?</p> <p>12 MR. JANES: Object to form.</p> <p>13 A. Not necessarily. They could do that if</p> <p>14 they wanted to, which I believe Arm has -- has</p> <p>15 stated a number of their partners do, or as I talk</p> <p>16 about in my report, you could just run the full set,</p> <p>17 the full set of tests. And those you aren't</p> <p>18 implementing or don't care about would be skipped.</p> <p>19 Q. So -- okay. So they -- the license -- in</p> <p>20 the absence of an OOB package, the licensee either</p> <p>21 has to figure out its own reference list of ACK</p> <p>22 tests or run all the tests. Is that fair?</p> <p>23 A. I would phrase it that they would select</p> <p>24 the test of -- set of tests that they needed to run</p> <p>25 for the features in their CPU or alternatively they</p>	<p style="text-align: right;">Page 132</p> <p>1 Q. So I guess I'm confused. When you talk</p> <p>2 about a component, you say there's two main</p> <p>3 components. And when we talked earlier, you said</p> <p>4 it's either a file or a group of files, each</p> <p>5 component.</p> <p>6 Are you now saying that -- and Exhibit 4,</p> <p>7 just to be clear, is the inventory of what was in</p> <p>8 the OOB downloaded, and it's what's cited as the</p> <p>9 sample OOB that you looked at in Paragraph 175.</p> <p>10 Are you saying that -- that none of these</p> <p>11 files before they're applied or something is done</p> <p>12 provide just a reference list of ACK tests?</p> <p>13 A. The Exhibit 4 we're looking at is a</p> <p>14 high-level quick start README. It's telling you how</p> <p>15 to unpack this thing, untar and unzip is the proper</p> <p>16 language, and where different of these assets are</p> <p>17 going to go.</p> <p>18 And then it looks like the directory path</p> <p>19 under 3.1 bullet is showing where the sample target</p> <p>20 for a partner configuration is going to go.</p> <p>21 And so I guess if we were to unzip this</p> <p>22 and look there, that may be where this list of --</p> <p>23 the reference list of ACK tests would be installed</p> <p>24 or be located after performing the steps in this</p> <p>25 README.</p>
<p style="text-align: right;">Page 131</p> <p>1 could just run the full suite of tests.</p> <p>2 Q. How is selecting the tests that they</p> <p>3 would run different from creating a reference list</p> <p>4 of ACK tests per the component of the OOB that you</p> <p>5 have in Paragraph 175?</p> <p>6 A. I think conceptually they're similar.</p> <p>7 Maybe I heard a difference in your question about</p> <p>8 having to figure out.</p> <p>9 The tests are -- the tests that we're</p> <p>10 talking about are -- you sort of grouped in terms of</p> <p>11 functionality. So you would go in and select -- I'm</p> <p>12 using floating point or I'm not using floating</p> <p>13 point, something like that, is a generic example.</p> <p>14 Q. Okay. The document that we're talking</p> <p>15 about, the -- one of the two main components that</p> <p>16 you say a reference list of ACK tests, can you go to</p> <p>17 Exhibit 4 and tell me which of these files is that</p> <p>18 component?</p> <p>19 A. I'm not sure that that file you're asking</p> <p>20 about is specifically named in this README section.</p> <p>21 It looks like in Step 3, as part of unzipping and</p> <p>22 untarring the file name at Bullet Point 3 ending</p> <p>23 .tar.gz, it looks like it may install that list of</p> <p>24 tests in that Subsection 3.1, bullet point,</p> <p>25 val/v8val.</p>	<p style="text-align: right;">Page 133</p> <p>1 Q. Okay. Now, if a licensee were to</p> <p>2 generate its own list, that would be done without</p> <p>3 the input from Arm. Right?</p> <p>4 A. I mean, I suppose that could be one</p> <p>5 scenario. As I talk about in my report, I think</p> <p>6 there were examples of Qualcomm generating lists and</p> <p>7 having Arm provide feedback on the list that they</p> <p>8 had selected.</p> <p>9 Q. Did that happen during the period of time</p> <p>10 that we're talking about between mid-'22 and early</p> <p>11 '25, do you know?</p> <p>12 A. I'd have to go back and look.</p> <p>13 Q. And I know it takes you a while to go</p> <p>14 through the report. Let me just ask you this: The</p> <p>15 initial creation of the list would be done without</p> <p>16 input, right, from Arm?</p> <p>17 And I understand you're saying, you know,</p> <p>18 maybe at some point you show it to Arm and you ask</p> <p>19 for feedback. But the initial list would be</p> <p>20 compiled by the licensee. Right?</p> <p>21 A. If I were to download the latest</p> <p>22 quarterly update and no one provided me an OOB for</p> <p>23 my target, I suppose the first person to take the</p> <p>24 first cut at a list of tests would be someone on the</p> <p>25 licensee side in that scenario.</p>

HIGHLY CONFIDENTIAL - OUTSIDE ATTORNEYS' EYES ONLY

<p>Page 150</p> <p>1 know, you don't have to go back to your RTL and try 2 debug it, try to figure out why it fails because the 3 expectation is that it will pass ultimately? 4 A. I -- I think that sounds right. I was -- 5 it could be the case maybe both were broken. But I 6 think that's what they're getting at in Footnote 1. 7 Correct. 8 Q. Okay. I mean, did you talk to anyone at 9 Arm about this document or kind of how to interpret 10 this document? 11 A. I recall I did in that first meeting that 12 was not -- I don't think it was the one with 13 Mr. Grisenthwaite. And we talked about some of 14 these test results and how they were presented. 15 Q. So that was -- sorry. That was a meeting 16 with who? Was that Mr. Agrawal? 17 A. Correct. 18 Q. Okay. 19 A. I was trying to get out of remembering 20 his last name again. 21 (Exhibit 11 was marked.) 22 Q. All right. Let me show you what's been 23 marked as Exhibit 11. Do you recognize this 24 document as the generic failure analysis that's 25 provided with an ACK?</p>	<p>Page 152</p> <p>1 Q. And you can see, you know, if you compare 2 Exhibit 10 and Exhibit 11, and, again, you can just 3 take my representation, but I just want to show you. 4 It says: Known failures shown up in OOB reports. 5 About halfway down on both. And then 6 Exhibit 10 says: Sample target. 7 And then it ends with [REDACTED] and Exhibit 11 8 is just blank. And so, again I, you know, 9 Exhibit 11 is just a generic one that's provided 10 with the ACK. 11 But my question is, you know, if you can 12 do a side-by-side comparison of these, they are not 13 the same. Right? 14 A. There are differences, yes. 15 Q. And in fact, there are things that are in 16 Exhibit 10 that are not in Exhibit 11. Right? 17 A. That looks right. I note there's a SIM 18 count category that's missing. The test looks to be 19 different in places. 20 Q. Yeah, if you look at even on Exhibit 10, 21 you look at kind of the first test name description, 22 the V8debug. I don't -- I don't see that on 23 Exhibit 11. Do you? There's a V8debug but it's got 24 a different, you know, file and it's not the reg 25 reset valve check.</p>
<p>Page 151</p> <p>1 A. Can you point me where this Bates number 2 is in my report? I just -- I don't see a file name 3 on it. 4 Q. I'm not sure if it's in the specific 5 paragraph or area. But, I mean, if you don't 6 recognize the document, you can -- you can tell me 7 that, too. That's fine. 8 A. It looks like another list of -- or 9 another failure list. I just -- I don't know if 10 this was sort of an exemplary one that was included 11 or if it came from somewhere else. 12 Q. So I will -- I will tell you -- I'll 13 represent to you that based on the metadata, this is 14 identified as the generic failure analysis that's 15 provided with the version of the ACK against which 16 this [REDACTED] failure report was generated. 17 A. Okay. 18 Q. It is -- it is in your materials 19 considered, but I'm not sure if you specifically 20 cite it anywhere. 21 A. Okay. 22 Q. But this similarly looks like a failure 23 analysis report. Right? 24 A. That -- that looks like it or a version 25 of it, yes.</p>	<p>Page 153</p> <p>1 A. That looks correct. 2 Q. All right. And then there's -- there's 3 some things in Exhibit 11 that are not in 4 Exhibit 10. Right? So there's some in the generic 5 that are not in the [REDACTED]-specific one. There's 6 something on the second page, the third row, I 7 guess, the -- the groupings, right, the third 8 grouping, the gicV5. I don't see that on the [REDACTED] 9 one. 10 A. I don't see that either. 11 Q. And then there's like a V8_ like a couple 12 of buckets down. There's a V8_6_pmu. I don't -- I 13 don't see that one on the [REDACTED] one. 14 A. I don't see that either. 15 Q. Okay. So, you know, I'm not going to 16 keep going. But, I mean, it's clear that these two 17 files are not the same. Right? 18 A. That's correct. 19 Q. And there are some notations for tests on 20 the [REDACTED] failure analysis that are not on the 21 generic failure analysis. Correct? 22 A. That looks right. 23 Q. And there are some tests on the generic 24 failure analysis that are not on the [REDACTED] failure 25 analysis. Correct?</p>

39 (Pages 150 - 153)

HIGHLY CONFIDENTIAL - OUTSIDE ATTORNEYS' EYES ONLY

Page 154	Page 156
<p>1 A. That's right.</p> <p>2 Q. That isn't surprising is it given that</p> <p>3 the -- the failure analysis at Exhibit 10 is</p> <p>4 specific to a -- a custom CPU?</p> <p>5 MR. JANES: Object to form.</p> <p>6 A. I would say I'm not -- it's not</p> <p>7 surprising that there would be differences versus</p> <p>8 what may be produced in a release -- in a quarterly</p> <p>9 release versus what my understanding is, something</p> <p>10 generated for a specific licensee implementation at</p> <p>11 a specific point in time.</p> <p>12 Q. Did you do any comparison of these</p> <p>13 failure reports for different Qualcomm custom CPUs</p> <p>14 against each other?</p> <p>15 A. I looked at what I recall a handful of</p> <p>16 different reports. But I don't recall performing a</p> <p>17 comparison across the different reports that I</p> <p>18 looked at.</p> <p>19 Q. Okay. If Qualcomm were to run or attempt</p> <p>20 to run a report like this on its own, the output</p> <p>21 would not indicate whether or not it was a test</p> <p>22 issue or a -- an issue with the CPU. Correct? So</p> <p>23 to put it another way, the -- the right-hand column</p> <p>24 we were talking about in Exhibit 10, that</p> <p>25 information would be missing if Qualcomm generated</p>	<p>1 with your CPU, you know, go fix it.</p> <p>2 MR. JANES: Object to form.</p> <p>3 A. I would say that's one thing that they</p> <p>4 seem to do per the charts I have in my report</p> <p>5 showing the ratio of Arm tests or ACK tests reported</p> <p>6 versus those that turn out to be an implementation</p> <p>7 issue.</p> <p>8 Q. And that's true with respect to the</p> <p>9 limitations made in this right-hand column on</p> <p>10 Exhibit 10 we've got notations of AEM limitation.</p> <p>11 Those are limitations determined by Arm with respect</p> <p>12 to their proprietary AEM. Right?</p> <p>13 A. That sounds correct to me.</p> <p>14 (Exhibit 12 was marked.)</p> <p>15 Q. I'm going to hand you Exhibit 12.</p> <p>16 So Exhibit 12 is the Arm V9 architecture</p> <p>17 compliance kit revision R6P0 user guide and the</p> <p>18 Bates number is QCVARM_1090346 through 1090695.</p> <p>19 And you reviewed this document. Correct?</p> <p>20 A. That's correct, yes.</p> <p>21 Q. Okay. You don't disagree, do you, that</p> <p>22 Arm expects its licensees to configure the ACK and</p> <p>23 not just run every test in the ACK, do you?</p> <p>24 MR. JANES: Object to form.</p> <p>25 A. So can I -- can I hear your question one</p>
Page 155	Page 157
<p>1 some sort of a failure report itself. Right?</p> <p>2 MR. JANES: Object to form.</p> <p>3 A. You're asking if Qualcomm ran -- ran this</p> <p>4 on their own implementation under test versus the</p> <p>5 AEM?</p> <p>6 Q. Yes. Well, sorry. I mean, if they -- if</p> <p>7 they tried to create what is Exhibit 10, so if they</p> <p>8 run to create a failure analysis for a specific CPU,</p> <p>9 so in this case Exhibit 10 it was [REDACTED] If they</p> <p>10 were able to generate a report of, you know, here's</p> <p>11 the failures, the information in the right-hand</p> <p>12 column as to assisting Qualcomm in terms of why it's</p> <p>13 failing would not be in that report. Right?</p> <p>14 A. I don't know that there would be an entry</p> <p>15 in the column that would say test issue versus</p> <p>16 Qualcomm implementation issue.</p> <p>17 Q. And that's because Arm is the -- Arm has</p> <p>18 more information with respect to what are the</p> <p>19 identified test issues. Right?</p> <p>20 A. I -- I would say that Arm would be the</p> <p>21 one to seemingly deduce whether it was an issue with</p> <p>22 the test that had been released or not.</p> <p>23 Q. I guess that's fair. I mean, they're the</p> <p>24 arbiter, right, of whether they deem it a test</p> <p>25 failure or if they're saying, no, it's a problem</p>	<p>1 more time?</p> <p>2 Q. You don't disagree, do you, that Arm</p> <p>3 expects its licensees to configure the ACK and not</p> <p>4 to just run every ACK test, do you?</p> <p>5 MR. JANES: Same objection.</p> <p>6 A. I'm not sure that this document says</p> <p>7 that. I'm looking through the ACK overview section.</p> <p>8 I don't see that it -- I'm not seeing language that</p> <p>9 says that one way or the other.</p> <p>10 Q. Do you have a view on whether Arm expects</p> <p>11 its licensees to configure the ACK?</p> <p>12 A. I would say configure it in the sense of</p> <p>13 some of the instructional quick start guides we saw</p> <p>14 earlier in terms of where things are supposed to be</p> <p>15 installed and so forth.</p> <p>16 Q. Do you think it should be configured as</p> <p>17 it is configured using the OOB or is it intended to</p> <p>18 be configured as that term is used with the OOB?</p> <p>19 A. I'll answer that there are partners who</p> <p>20 use the OOB. And as I talk about in my report,</p> <p>21 partners who don't or create their own.</p> <p>22 Q. And the intent is that the OOB is used to</p> <p>23 configure the ACK, right, regardless of who creates</p> <p>24 it?</p> <p>25 A. As we talked about before, I would say</p>

40 (Pages 154 - 157)

HIGHLY CONFIDENTIAL - OUTSIDE ATTORNEYS' EYES ONLY


Page 226	Page 228
<p>1 IN THE UNITED STATES DISTRICT COURT 2 FOR THE DISTRICT OF DELAWARE</p> <p>3 QUALCOMM INCORPORATED, § 4 A DELAWARE CORPORATION, § 5 QUALCOMM TECHNOLOGIES, § C.A. NO. 24-490-MN 6 INC., A DELAWARE § 7 CORPORATION, § 8 § 9 PLAINTIFFS, § 10 § 11 - AGAINST - § 12 § 13 ARM HOLDINGS PLC., § 14 F/K/A ARM LTD., A U.K. § 15 CORPORATION, § 16 DEFENDANT. § 17 18 19 20 21 22 23 24 25</p> <p>REPORTER'S CERTIFICATION DEPOSITION OF MICHAEL BROGIOLI TAKEN SEPTEMBER 25, 2025</p> <p>I, TAMARA CHAPMAN, Certified Shorthand Reporter in and for the State of Texas, hereby certify to the following: That the witness, MICHAEL BROGIOLI, was duly sworn by the officer and that the transcript of the oral deposition is a true record of the testimony given by the witness; That the original deposition was delivered to CATHERINE NYARADY; That a copy of this certificate was served on all parties and/or the witness shown herein on _____.</p>	<p>1 Qualcomm Inc. v. Arm Holdings PLC 2 Michael Brogioli (#7614657) 3 E R R A T A S H E E T 4 PAGE _____ LINE _____ CHANGE _____ 5 _____ 6 REASON _____ 7 PAGE _____ LINE _____ CHANGE _____ 8 _____ 9 REASON _____ 10 PAGE _____ LINE _____ CHANGE _____ 11 _____ 12 REASON _____ 13 PAGE _____ LINE _____ CHANGE _____ 14 _____ 15 REASON _____ 16 PAGE _____ LINE _____ CHANGE _____ 17 _____ 18 REASON _____ 19 PAGE _____ LINE _____ CHANGE _____ 20 _____ 21 REASON _____ 22 _____ 23 _____ 24 Michael Brogioli Date _____ 25</p>
Page 227	Page 229
<p>1 I further certify that pursuant to FRCP No. 2 30(f)(i) that the signature of the deponent: 3 was requested by the deponent or a party before 4 the completion of the deposition and that the 5 signature is to be returned within 30 days from date 6 of receipt of the transcript. If returned, the 7 attached Changes and Signature Page contains any 8 changes and the reasons therefor; 9 X was not requested by the deponent or a party 10 before the completion of the deposition. 11 I further certify that I am neither counsel for, 12 related to, nor employed by any of the parties in 13 the action in which this proceeding was taken, and 14 further that I am not financially or otherwise 15 interested in the outcome of the action. 16 Certified to by me this 26th day of September, 2025. 17 18 19 20 21 22 23 24 25</p> <p> Tamara Chapman, CSR, RPR-CRR CSR NO. 7248; Expiration Date: 12-31-25 Veritext Legal Solutions Firm Registration No. 571</p>	<p>1 Qualcomm Inc. v. Arm Holdings PLC 2 Michael Brogioli (#7614657) 3 ACKNOWLEDGEMENT OF DEPONENT 4 I, Michael Brogioli, do hereby declare that I 5 have read the foregoing transcript, I have made any 6 corrections, additions, or changes I deemed necessary as 7 noted above to be appended hereto, and that the same is 8 a true, correct and complete transcript of the testimony 9 given by me. 10 11 12 Michael Brogioli Date _____ 13 *If notary is required 14 SUBSCRIBED AND SWORN TO BEFORE ME THIS 15 _____ DAY OF _____, 20____. 16 17 18 19 NOTARY PUBLIC 20 21 22 23 24 25</p>

EXHIBIT 6

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

QUALCOMM INCORPORATED,)	
a Delaware corporation; and)	
QUALCOMM TECHNOLOGIES, INC.,)	
a Delaware corporation,)	
)	
Plaintiffs,)	C.A. No. 24-490 (MN)
)	
v.)	SUBMITTED UNDER SEAL –
)	HIGHLY CONFIDENTIAL –
ARM HOLDINGS PLC., f/k/a ARM LTD.,)	ATTORNEYS’ EYES ONLY
a U.K. corporation,)	
)	
Defendant.)	

**PLAINTIFFS’ LETTER TO SPECIAL MASTER HELENA C. RYCHLICKI
REGARDING NEWLY-LEARNED FACTS AND SUBSEQUENT EVENTS**

OF COUNSEL:

Catherine Nyarady
Jacob A. Braly
PAUL, WEISS, RIFKIND,
WHARTON & GARRISON LLP
1285 Avenue of the Americas
New York, NY 10019
(212) 373-3000

Karen L. Dunn
William A. Isaacson
Erin J. Morgan
Melissa F. Zappala
DUNN, ISAACSON, RHEE LLP
401 Ninth Street NW
Washington, DC 20004
(202) 240-2900

MORRIS, NICHOLS, ARSHT & TUNNELL LLP
Jack B. Blumenfeld (#1014)
Jennifer Ying (#5550)
Travis Murray (#6882)
1201 North Market Street
P.O. Box 1347
Wilmington, DE 19899
(302) 658-9200
jblumenfeld@morrisnichols.com
jying@morrisnichols.com
tmurray@morrisnichols.com

Attorneys for Plaintiffs

September 15, 2025

Dear Special Master Rychlicki:

Pursuant to D. Del. LR 7.1.2, Plaintiffs write to advise Your Honor of newly-learned facts and subsequent events that have occurred since the August 14 and 22 hearings that relate to Qualcomm's pending motions to compel production of third-party Arm TLAs and related agreements (D.I. 359; 8/1/2025 Qualcomm Ltr. at 1-2), and supplemental interrogatory responses and 30(b)(6) testimony identifying and explaining relevant terms in these agreements (D.I. 375; 8/11/2025 Qualcomm Ltr. at 4-5).

As Your Honor may recall, at the August 14 hearing, Arm took the position that there was no need to compel production of third-party agreements licensing [REDACTED] because Arm had already produced those documents, except for those subject to pending motions for protective orders. Specifically, Arm's counsel represented: "[I]n terms of parties that do have a license [to [REDACTED]], we have provided that discovery and sought to provide that discovery unless it was objected to [by the third party], and clearly we have some objections here that we're dealing with today." Ex. 1, 8/14/2025 Tr. 60:16-22. Similarly, at the August 22 hearing, counsel for Arm represented, in opposing Qualcomm's motion to compel supplemental responses to interrogatories 6 and 11:

So after the SAC allowed and the TLA claims of [REDACTED] were in the case, we went and provided discovery on [REDACTED]. We produced the documents. We produced them on a rolling basis because, as Your Honor knows, third parties have confidentiality interests in those documents. We provided notice to those third parties and an opportunity to object. [REDACTED] did not object and so that agreement was produced. As Your Honor knows, [REDACTED] has objected and that dispute is before you. So that agreement has not been produced yet. In any event, Qualcomm then deposed a number of witnesses about these documents. . . . Now, there's definitely a discrepancy whether Qualcomm thinks it got enough information from those witnesses, but there's no question that it certainly had that opportunity. . . . *they had the documents, so there's no dispute about that.*

Ex. 2, 8/22/2025 Tr. 277:18-278:13, 278:19-23, 279:17-18 (emphasis added).

Following the two hearings, Qualcomm has learned that Arm had not produced all, or even most, of the third-party agreements for [REDACTED] as of the June and July depositions of Arm's witnesses, or even as of the August hearings. To be clear: as of August 22, Arm had produced license agreements for [REDACTED] with [REDACTED] third parties.¹ Since then, however, Arm has produced license agreements with new third parties: [REDACTED] on September 4; [REDACTED] last week on September 11; and [REDACTED]

¹ These were [REDACTED]. These [REDACTED] third parties' agreements were also the only ones produced when Qualcomm's opening expert reports were due on August 8. Arm produced [REDACTED] additional third parties' agreements before it served its rebuttal report on September 5, 2025, and Arm's expert relied on those newly produced agreements.

[REDACTED] just today. As Your Honor may have seen, a [REDACTED] new third party ([REDACTED]) moved for protective orders last Thursday. According to these third parties, they did not receive notice from Arm about production of their agreements until late August, after the August 14 hearing with Your Honor. In addition, last Friday night, a [REDACTED] new third party, [REDACTED], contacted Qualcomm advising that it did not receive notice from Arm until September 4.²

Notwithstanding Arm's repeated assurances that it had produced everything not subject to a motion for a protective order, Qualcomm appears only to be receiving additional agreements (and additional third parties have moved for protective orders) now because Qualcomm's counsel scoured the public record for other mentions of Arm licensees who have [REDACTED] and raised three of those potential licensees with Arm. See 8/7/2025 Arm Opp. to Qualcomm's 8/1/2025 Mot. to Compel at 1 ([REDACTED]). Arm has refused to respond to Qualcomm's questions about (1) why it did not produce these agreements earlier during discovery, (2) whose agreements remain outstanding, or (3) what it has done to ensure that the deficiencies that caused it to miss these agreements in its initial productions are not affecting other areas of its production. See Ex. 3, Correspondence between Arm and Qualcomm Counsel.

As of the date of this letter, Qualcomm remains in the dark about how many additional license agreements for [REDACTED] are still to be produced, when it can expect that production, and why Arm did not produce these agreements within the fact discovery period. Qualcomm also has not had any opportunity to question any Arm witness about these newly produced documents, making more critical Qualcomm's motion to compel Arm to produce a 30(b)(6) witness that is prepared to testify on relevant terms of third-party agreements. Qualcomm's motions to compel Arm's third-party agreements for [REDACTED]; supplemental interrogatory responses; and 30(b)(6) testimony accordingly present live disputes, despite representations that the subject documents had been produced before Arm's witnesses' depositions and last month's hearings.³

Qualcomm respectfully requests that Your Honor grant its motions to compel. Counsel is available should Your Honor have any questions.

Respectfully submitted,

/s/ Jennifer Ying

Jennifer Ying (#5550)
Words: 1005

² Qualcomm will be meeting and conferring with [REDACTED] this week, as [REDACTED] has requested.

³ Qualcomm further notes that its reply expert reports, including one which must address these third-party agreements, are due at the end of this week on September 19. See D.I. 44, ¶ 7(g)(i). The parties' dispositive and *Daubert* motions are due on October 24. D.I. 44, ¶ 9. Qualcomm may seek additional relief in the future should it become necessary based upon Arm's belated disclosures.

EXHIBIT 7

<div>1</div> <div>13:12:40</div> <div>IN THE UNITED STATES DISTRICT COURT FOR THE DISTRICT OF DELAWARE</div> <div>ARM LTD., a U.K. corporation, Plaintiff, v. QUALCOMM, INC., a Delaware corporation, et al., Defendants.</div> <div>C.A. No. 22-1146 (MN)</div> <div>Thursday, March 7, 2024 2:13 p.m. Oral Argument</div> <div>844 King Street Wilmington, Delaware</div> <div>BEFORE: THE HONORABLE MARYELLEN NOREIKA United States District Court Judge</div> <div>APPEARANCES:</div> <div>YOUNG CONAWAY STARGATT & TAYLOR BY: ANNE SHEA GAZA, ESQ. BY: ROBERT M. VRANA, ESQ.</div> <div>-and-</div> <div>MORRISON FOERSTER, LLP BY: KYLE W.K. MOONEY, ESQ. BY: NICHOLAS R. FUNG, ESQ. BY: DANIEL MACKNIDES, ESQ.</div> <div>Counsel for the Plaintiff</div>	<div>3</div> <div>14:13:35 1 Mooney and Nicholas Fung of Morrison & Foerster as well as</div> <div>14:13:38 2 my colleague, Robert Vrana and Daniel Macknides.</div> <div>14:13:45 3 MR. BLUMENFELD: Good afternoon, Your Honor.</div> <div>14:13:48 4 Jack Blumenfeld from Morris Nichols for the Qualcomm</div> <div>14:13:52 5 defendants. And with me is Karen Dunn and Erin Morgan from</div> <div>14:13:56 6 Paul Weiss.</div> <div>14:13:56 7 THE COURT: Great.</div> <div>14:13:58 8 MS. GAZA: Your Honor, if I may, I'm sorry, I</div> <div>14:14:01 9 meant to mention also that third-party counsel for Ampere</div> <div>14:14:06 10 and Apple are in attendance as well if you would like their</div> <div>14:14:09 11 introduction.</div> <div>14:14:10 12 THE COURT: Sure. You guys can give me your</div> <div>14:14:12 13 input if you need to.</div> <div>14:14:15 14 All right. Let's start with -- so we have a</div> <div>14:14:19 15 couple of objections and we have the trial date issue. I</div> <div>14:14:25 16 saw there was another order from Judge Hatcher yesterday.</div> <div>14:14:28 17 Am I going to be getting objections for that, anyone?</div> <div>14:14:35 18 MR. MOONEY: No, Your Honor.</div> <div>14:14:35 19 THE COURT: I didn't get a yes or no. And when</div> <div>14:14:38 20 you speak, could you stand.</div> <div>14:14:39 21 MS. DUNN: Not from us, Your Honor.</div> <div>14:14:41 22 MR. MOONEY: No, Your Honor.</div> <div>14:14:42 23 THE COURT: Okay. Great. All right.</div> <div>14:14:45 24 Okay. Let's start with Mr., is it Son or Son?</div> <div>14:14:53 25 MS. DUNN: Yes, Your Honor. Karen Dunn for</div>
<div>2</div> <div>1 APPEARANCES CONTINUED:</div> <div>2</div> <div>3 MORRIS NICHOLS ARSHT & TUNNELL LLP BY: JACK BLUMENFELD, ESQ.</div> <div>4 -and-</div> <div>5 PAUL WEISS BY: KAREN L. DUNN, ESQ. 6 BY: ERIN MORGAN, ESQ.</div> <div>7 Counsel for the Defendants</div> <div>8</div> <div>9 FISH & RICHARDSON BY: NITIKA GUPTA FIORELLA, ESQ.</div> <div>10</div> <div>11 -and-</div> <div>12 WALKER STEVENS CANNOM, LLP BY: HANNAH L. CANNOM, ESQ.</div> <div>13 Counsel for Apple, Inc.</div> <div>14</div> <div>15 WILSON SONSINI GOODRICH & ROSATI BY: BRAD SORRELS, ESQ.</div> <div>16 Counsel for Ampere Computing</div> <div>17</div> <div>18 -----</div> <div>19</div> <div>20</div> <div>13:37:07 21 THE COURT: All right. Good afternoon everyone.</div> <div>13:37:07 22 Please be seated.</div> <div>14:13:23 23 Ms. Gaza.</div> <div>14:13:28 24 MS. GAZA: Good afternoon, Your Honor. Anne</div> <div>14:13:29 25 Gaza on behalf of plaintiff, ARM. I'm joined today by Kyle</div>	<div>4</div> <div>14:14:56 1 Qualcomm.</div> <div>14:14:57 2 THE COURT: So I need you to really focus me on</div> <div>14:15:01 3 the standard here because I'm not looking at this de novo,</div> <div>14:15:07 4 and so I need you to focus on why this was clearly erroneous</div> <div>14:15:14 5 or contrary to law.</div> <div>14:15:16 6 MS. DUNN: I'm happy to do that, Your Honor. We</div> <div>14:15:19 7 have slides as to this argument that we can hand up if it</div> <div>14:15:24 8 pleases the Court. Thank you.</div> <div>14:15:25 9 THE COURT: Let me ask you this before I start.</div> <div>14:15:27 10 Is there really a dispute as to whether he told Samsung or</div> <div>14:15:39 11 others that Qualcomm's license was going to expire? Is that</div> <div>14:15:45 12 in dispute?</div> <div>14:15:46 13 MS. DUNN: There is a dispute about his</div> <div>14:15:48 14 statements. We know he -- there is no dispute that he made</div> <div>14:15:52 15 statements. I don't know, perhaps counsel for Arm can tell</div> <div>14:15:55 16 us whether they dispute that he said the license would</div> <div>14:15:58 17 expire. I don't think that's in the record.</div> <div>14:16:02 18 THE COURT: Why don't you guys talk about that</div> <div>14:16:04 19 because I need to understand what there is a dispute about</div> <div>14:16:06 20 so I can decide if he has superior or unique knowledge. If</div> <div>14:16:10 21 nobody disputes what you say he said, then I'm not sure I</div> <div>14:16:14 22 care as much. Why don't you guys talk about it. I can't</div> <div>14:16:19 23 believe you haven't done that already.</div> <div>14:16:23 24 (Discussion off the record.)</div> <div>14:16:25 25 MR. MOONEY: Your Honor, Rene Haas, the current</div>

14:50:05 **1** statements beyond Mr. Son's role as ARM's Chair.
 14:50:08 **2** THE COURT: Okay. Help me out with that. That
 14:50:11 **3** was not very helpful. She tried to get the information and
 14:50:14 **4** you said nothing. So are you going to respond to that or do
 14:50:20 **5** they need to take Mr. Son's deposition and ask him?
 14:50:23 **6** MR. MOONEY: A couple of points, Your Honor.
 14:50:25 **7** First off, Your Honor ask about interrogatories.
 14:50:28 **8** THE COURT: All right. Well, they gave me
 14:50:30 **9** RFA's. Let's stick with what they just told me.
 14:50:32 **10** MR. MOONEY: As far as the RFA's, we served
 14:50:35 **11** those responses, Your Honor, on November 17th, four months
 14:50:38 **12** ago.
 14:50:38 **13** THE COURT: They were still trying to get
 14:50:41 **14** Mr. Son's deposition. Let's just say -- I'm asking now,
 14:50:44 **15** they tried to get the information, you denied it, there is a
 14:50:47 **16** basis for them to think that maybe he said these things and
 14:50:50 **17** you just shut them down. So why if you're not going to tell
 14:50:54 **18** them what's going on shouldn't they be able to get his
 14:50:58 **19** deposition and ask him?
 14:50:59 **20** MR. MOONEY: Understood, Your Honor. This is
 14:51:00 **21** the first time the RFA's have been raised in connection with
 14:51:04 **22** this dispute. They were not before Judge Hatcher. They
 14:51:07 **23** were not part of any of the exhibits. As far as RFA's go,
 14:51:10 **24** our concern as Your Honor heard is that they were ambiguous.
 14:51:13 **25** We are happy to meet and confer with Qualcomm about those

14:51:16 **1** RFA's and to supplement as required.
 14:51:19 **2** We did offer Qualcomm back in November the
 14:51:22 **3** opportunity to serve two interrogatories directed squarely
 14:51:27 **4** at Mr. Son's statements to Samsung and others. Qualcomm
 14:51:32 **5** ignored that offer until fact discovery closed and at that
 14:51:36 **6** point told us it was futile and sought Mr. Son's deposition.
 14:51:40 **7** We believe the interrogatories would have been
 14:51:42 **8** the best way to obtain the information. That said, the
 14:51:47 **9** RFA's having now been raised for the first time to me since
 14:51:49 **10** November 17th, we are happy to meet and confer about them.
 14:51:52 **11** THE COURT: Why did you not take them up on the
 14:51:54 **12** interrogatories? Because it wasn't what you wanted? You
 14:51:57 **13** could have gotten the information if you think it's relevant
 14:51:59 **14** and really necessary, why not get it there and then come to
 14:52:02 **15** me and say, or come to Judge Hatcher and say look, we tried
 14:52:06 **16** everything, we're just being thwarted?
 14:52:11 **17** MS. DUNN: We discussed this obviously and the
 14:52:14 **18** reason is we tried to get a 30(b)(6) from them and the
 14:52:20 **19** 30(b)(6) came on this precise topic. And the 30(b)(6) came
 14:52:24 **20** to the deposition and said -- and disclaimed all knowledge.
 14:52:28 **21** THE COURT: Did you move to compel? Did you
 14:52:31 **22** complain that the 30(b)(6) witness wasn't properly prepared?
 14:52:36 **23** MS. DUNN: We did not bring that -- we are
 14:52:38 **24** trying to be judicious with the issues.
 14:52:41 **25** THE COURT: You're obviously not because you

14:52:43 **1** object to everything that Judge Hatcher does, so I'm not
 14:52:45 **2** really going to believe that you guys care that much about
 14:52:50 **3** judicial efficiency or things likes that.
 14:52:53 **4** Here is what we're going to do. I'm going to
 14:52:55 **5** withhold on that particular issue. You know how I feel
 14:52:58 **6** about it, that I don't think you guys really tried that
 14:53:01 **7** hard, but the fact is there is probably information there
 14:53:04 **8** that's relevant and that the plaintiff because of its
 14:53:08 **9** stonewalling on requests for admission didn't provide.
 14:53:13 **10** So you guys can go back and talk, you can
 14:53:16 **11** provide an actual responsive response to those, and if you
 14:53:21 **12** get some additional information and then you say they still
 14:53:26 **13** won't give us an answer, you can come back. I don't know
 14:53:28 **14** that I would actually give you the deposition, but I don't
 14:53:31 **15** know that I won't because I think both of you are not really
 14:53:34 **16** trying to get at the information. The defendant just says I
 14:53:37 **17** want what I want and the plaintiff is just saying look, we
 14:53:40 **18** disagree with your characterizations, but we're not really
 14:53:43 **19** interested in finding out the information whether he said
 14:53:46 **20** these things or not, we're just going to go with -- we're
 14:53:52 **21** going to, you know, say, oh, we don't really know what
 14:53:56 **22** you're asking about.
 14:53:59 **23** Go back and talk about that. If you still can't
 14:54:02 **24** work it out, you can tell me and I'll rule on the
 14:54:04 **25** objections.

14:54:05 **1** All right. Now we have the agreements. And
 14:54:12 **2** what I don't understand about the agreements is, is
 14:54:20 **3** plaintiff -- what I can't understand is how much is
 14:54:24 **4** plaintiff relying on these agreements because it seems like
 14:54:28 **5** the plaintiff is saying well, gosh, you know, because of
 14:54:32 **6** this conduct we have had to change our terms. And if that's
 14:54:38 **7** the case, I don't understand how you make those arguments
 14:54:42 **8** without them being able to fairly contest that.
 14:54:47 **9** So is that the plaintiff's argument or is that
 14:54:51 **10** an argument that the plaintiffs are making?
 14:54:55 **11** MR. MOONEY: Your Honor, that is not an argument
 14:54:57 **12** that the plaintiffs are making.
 14:54:58 **13** THE COURT: So plaintiffs are not going to say
 14:55:00 **14** in any shape or fashion or in arguments for an injunction or
 14:55:07 **15** anything that you have had to change terms of agreements?
 14:55:14 **16** MR. MOONEY: Your Honor, plaintiff is not going
 14:55:17 **17** to argue that we have already had to make changes to our ALA
 14:55:22 **18** agreements based on this dispute and based on this issue.
 14:55:25 **19** The argument is and the harm is that if Qualcomm is allowed
 14:55:29 **20** to get away with this and to misuse our information and to
 14:55:32 **21** release these products, then looking forward there is
 14:55:35 **22** certainly going to be a disruption to our license agreements
 14:55:39 **23** and licensing ecosystem. These are agreements in the
 14:55:43 **24** future. They haven't yet been executed. We aren't going to
 14:55:48 **25** rely on changes to any ALA agreements that have already been

33

14:55:51 **1** executed which is what we're talking about here.

14:55:53 **2** THE COURT: With that understanding,

14:55:55 **3** Mr. Blumenfeld.

14:55:56 **4** MR. BLUMENFELD: Thank you, Your Honor. We're

14:55:59 **5** in exactly the weird position that I think you mentioned and

14:56:03 **6** that was a pretty careful statement, but I think the proof

14:56:07 **7** is really in the pudding here. One of the things we cited

14:56:12 **8** is Mr. Schoettelkotte's expert report, I can hand up the

14:56:23 **9** pages, it's Exhibit 29, but I can hand up the pages if

14:56:27 **10** that's easier.

14:56:28 **11** THE COURT: Yes, that would be helpful.

14:56:34 **12** MR. BLUMENFELD: And Mr. Schoettelkotte is ARM's

14:56:38 **13** expert on the irreparable harm that they are saying is

14:56:43 **14** happening, is going to happen -- let me put my reading

14:56:47 **15** glasses on because I can't see this. But if you look at

14:56:50 **16** paragraphs 80 and 82 of his report, this is from December,

14:56:54 **17** Mr. Schoettelkotte talks about the negotiations that ARM

14:56:59 **18** does with its licensees, and the factors it considers when

14:57:06 **19** negotiating the terms. And ARM negotiates license

14:57:10 **20** agreements for certain purposes, negotiates rates. And one

14:57:14 **21** of the strange things about this is, he doesn't cite the

14:57:19 **22** agreements when he does that. He talks about the

14:57:21 **23** agreements.

14:57:21 **24** If you look at the footnotes, his basis for this

14:57:25 **25** is discussions with people who work at ARM. So he's going

34

14:57:29 **1** to testify about the importance of these agreements, but not

14:57:33 **2** based on the agreements, based on conversations, discussions

14:57:37 **3** he had with people at ARM. We don't get to have those

14:57:40 **4** conversations with people at ARM. Our expert doesn't.

14:57:42 **5** And if you look at paragraph 82 of

14:57:50 **6** Mr. Schoettelkotte says the risk is acute, even considering

14:57:55 **7** only ARM's largest licenses. And he refers specifically

14:57:58 **8** there to Qualcomm and Apple and Google, that he talks about

14:58:04 **9** what they paid for the right to acquire and consolidate the

14:58:08 **10** work of licensees. And again, it's discussions that he has

14:58:14 **11** with people from ARM.

14:58:15 **12** I don't know how we're supposed to deal with

14:58:17 **13** that. They have an expert who says here is what the

14:58:20 **14** agreements are all about, here is what the licensees are

14:58:23 **15** permitted and not permitted to do, what Qualcomm is doing

14:58:27 **16** may cause them to breach those agreements, but you can't

14:58:30 **17** know what they are.

14:58:31 **18** And to get specific about that, I can hand up

14:58:36 **19** one more. [REDACTED]

14:58:50 **21** THE COURT: Yeah, I only brought out the

14:58:52 **22** objection stuff, so if this is from the earlier papers,

14:59:00 **23** exhibits, I didn't bring them out. Thank you.

14:59:03 **24** MR. BLUMENFELD: So we're asking about what are

14:59:04 **25** the terms, what are the license terms, what are the royalty

35

14:59:08 **1** terms, and what we got was redacted version of this

14:59:14 **2** agreement. And if you turn on page, I think it's 6 of 29, 5

14:59:24 **3** of 29, I'm sorry, paragraph 2.1, [REDACTED]

14:59:40 **7** And if you turn to annex 1, which is page 27 of

14:59:48 **8** 29 through 29 of 29, it's entirely redacted. So what we got

14:59:55 **9** here was a license agreement where the terms are totally

14:59:59 **10** redacted, the license terms, the royalty terms, whatever

15:00:05 **11** intellectual property rights, totally redacted and an expert

15:00:09 **12** who comes in and says oh, ARM is really very careful about

15:00:13 **13** the terms that it negotiates with its licensees and these

15:00:17 **14** licensees might breach their agreements because of things

15:00:22 **15** that Qualcomm has done. I don't know how we're supposed to

15:00:30 **16** deal with that.

15:00:31 **17** And to us, that is clearly erroneous, that they

15:00:35 **18** get to rely on the terms of license agreements by talking to

15:00:40 **19** ARM executives but then withhold what the terms are. I

15:00:44 **20** mean, that's just prejudicial to us, and we don't know how

15:00:49 **21** we're supposed to deal with it. How do we respond to this

15:00:52 **22** expert report that we got when our people can't see the

15:00:56 **23** agreements and can't talk to the people?

15:00:58 **24** And their answer to this is these are such

15:01:02 **25** highly confidential terms that we can't give them to you and

36

15:01:06 **1** they're nonresponsive, I don't know how they can say they're

15:01:11 **2** nonresponsive.

15:01:11 **3** We have an attorney's eyes only.

15:01:14 **4** THE COURT: You have a source code provision,

15:01:17 **5** too, so source code could be -- it's okay to get source code

15:01:20 **6** but not license terms.

15:01:22 **7** MR. BLUMENFELD: Correct. Well, when ARM in

15:01:26 **8** other litigation probably or even this, source code is the

15:01:30 **9** most valuable stuff, when they are in this litigation, their

15:01:35 **10** license agreements are their most valuable stuff.

15:01:37 **11** But putting that aside, there is a provision

15:01:40 **12** with outside counsel and expert only can see things. And

15:01:44 **13** this does go -- tie two things together because I think the

15:01:48 **14** Apple issue falls in the same category. But the funny thing

15:01:55 **15** about the [REDACTED] which is the subject of the

15:01:58 **16** other objection is that the irony is that this came up

15:02:03 **17** because ARM said they would produce that agreement. They

15:02:06 **18** haven't. I assume they're going to redact it, like they

15:02:10 **19** have redacted everything else. And then [REDACTED] came in and

15:02:13 **20** said no, don't produce it, and Judge Hatcher agreed with

15:02:17 **21** them.

15:02:19 **22** THE COURT: Well, presumably [REDACTED] is allowed to

15:02:22 **23** do that, right?

15:02:23 **24** MR. BLUMENFELD: I'm not saying --

15:02:24 **25** THE COURT: ARM can with -- ^ .

15:02:28 **1** MR. BLUMENFELD: But ARM hasn't taken the
 15:02:31 **2** position, and even in response to our objection ARM didn't
 15:02:34 **3** take a position on the [REDACTED] --
 15:02:34 **4** THE COURT: So the 2023 license hasn't even been
 15:02:37 **5** produced as redacted as this?
 15:02:39 **6** MR. BLUMENFELD: No, we have gotten nothing from
 15:02:41 **7** the 2023 agreement. But what we did hear today is that
 15:02:45 **8** going toward there is going to be the structural and term
 15:02:50 **9** amendments and it's going to cause irreparable harm. Here
 15:02:55 **10** we have an agreement that's two years after the alleged
 15:02:58 **11** breach, so what is the structure and what are the terms
 15:03:02 **12** because they know but we don't know.
 15:03:04 **13** THE COURT: What if they were to say no terms
 15:03:05 **14** have been changed?
 15:03:07 **15** MR. BLUMENFELD: I don't think they will change
 15:03:09 **16** that because -- they will say that because they put in a
 15:03:13 **17** declaration about how we spent two years negotiating this,
 15:03:16 **18** et cetera, but if they came in and said that, we still don't
 15:03:20 **19** know what the terms were that weren't changed because we got
 15:03:23 **20** a redacted version, so that doesn't really help us.
 15:03:26 **21** THE COURT: What I'm trying to figure out is if
 15:03:29 **22** they don't have specifics, they're going to come in and say,
 15:03:34 **23** well, judge, if you don't make Qualcomm destroy all this
 15:03:38 **24** stuff and you let them -- you let them use it, we're going
 15:03:43 **25** to be irreparably harmed because we're going to have to

15:03:48 **1** change terms of our licenses and I say okay, tell me how,
 15:03:51 **2** and they say we're going to have to change it in a way
 15:03:54 **3** that's really bad. And I say, well, can you give me some
 15:03:57 **4** facts and they say well, Mr. Williamson says it will be bad
 15:04:04 **5** for us.
 15:04:05 **6** They're not going to meet their burden if they
 15:04:07 **7** just say that, right? They're going to have to give me some
 15:04:11 **8** specifics of how they would have to change their terms. And
 15:04:15 **9** if they haven't given it to you, how can they give me those
 15:04:20 **10** specifics? So I guess I'm not really sure -- I guess I'm
 15:04:28 **11** not really sure why -- I mean, if that's really their
 15:04:38 **12** argument and they can't prove it, isn't that their choice?
 15:04:46 **13** MR. BLUMENFELD: I don't know whether they can
 15:04:47 **14** prove it or not. You're the judge and you're going to make
 15:04:51 **15** some rulings on that. But what we've gotten now is an
 15:04:55 **16** expert from them and actually more than one expert because I
 15:04:58 **17** only gave you one of their reports --
 15:05:00 **18** THE COURT: But the expert is not really saying
 15:05:02 **19** anything, he's saying they negotiate with companies and they
 15:05:05 **20** include many terms. They consider many different factors,
 15:05:11 **21** but they're secret. In particular they negotiate license
 15:05:16 **22** agreements for the purpose of the licensee using ARM
 15:05:19 **23** technology and ARM confidential information. Okay? None of
 15:05:23 **24** this is really a surprise so far. Right?
 15:05:25 **25** ARM also negotiates its rates based on

15:05:29 **1** downstream target margins. Okay, rates, rates might be an
 15:05:35 **2** issue, but we don't know what any of the rates are, right?
 15:05:38 **3** MR. BLUMENFELD: We do not.
 15:05:39 **4** THE COURT: They can't come in and say look,
 15:05:41 **5** we're going to have to change our rates because there are
 15:05:44 **6** none, right?
 15:05:45 **7** MR. BLUMENFELD: But what's unfair is they have
 15:05:47 **8** people like Mr. Schoettelkotte come in and saying they
 15:05:50 **9** negotiate different rates with each licensee, but you can't
 15:05:53 **10** know what they are or whether that's true. But I have
 15:05:57 **11** talked at people at ARM, so believe me, that's okay. And
 15:06:03 **12** even if, you know, that three largest licensees, you know,
 15:06:09 **13** paid for certain rights, I don't know if they paid for those
 15:06:11 **14** rights or if they got those rights.
 15:06:13 **15** THE COURT: You don't know if everybody else got
 15:06:16 **16** those same rights and they got it for a cheaper price?
 15:06:19 **17** MR. BLUMENFELD: Exactly.
 15:06:21 **18** THE COURT: Or the same price or anything else.
 15:06:22 **19** MR. BLUMENFELD: And we don't know what [REDACTED]
 15:06:25 **20** got in 2023 after the alleged breach, either. And getting
 15:06:30 **21** back to the competitive harm, I don't think disclosing it to
 15:06:34 **22** me and disclosing it to our litigation expert constitutes
 15:06:39 **23** sufficient competitive harm that we don't get access to the
 15:06:45 **24** agreements. I have been doing this for a long time and
 15:06:49 **25** nobody has ever suggested that somehow disclosing to me

15:06:53 **1** creates competitive harm. I don't think they're going to
 15:06:56 **2** say that.
 15:06:58 **3** THE COURT: Okay. Let me hear from defendant.
 15:07:04 **4** So what exactly -- like you just told me we're not going to
 15:07:09 **5** say that we already changed, but we are going to argue that
 15:07:12 **6** if they get away with this, we may have to change, but how
 15:07:17 **7** could you possibly make that argument and give me any
 15:07:19 **8** specifics if I don't know what you had before?
 15:07:23 **9** MR. MOONEY: Well --
 15:07:23 **10** THE COURT: If you just say we might have to
 15:07:25 **11** reduce rates, okay, but that doesn't tell me anything about
 15:07:29 **12** whether that's harm to you.
 15:07:32 **13** MR. MOONEY: Well, on that point, Your Honor,
 15:07:34 **14** there are many -- there are very few redactions that are
 15:07:38 **15** left in these agreements.
 15:07:40 **16** THE COURT: I'm just looking at the [REDACTED] one,
 15:07:42 **17** is this the current version that has --
 15:07:44 **18** MR. MOONEY: The [REDACTED] one I believe is the
 15:07:47 **19** current version and the redaction there actually relates to
 15:07:50 **20** --
 15:07:50 **21** THE COURT: And we got four pages and that's in
 15:07:52 **22** the middle of the agreement, then we have the terms of the
 15:07:55 **23** agreement, which I can show in open court because I'm not
 15:08:00 **24** disclosing anything. Okay. But what of these terms then
 15:08:07 **25** are you going to be relying on to say that you might have to

<p style="text-align: center;">41</p> <p>15:08:10 1 change something, only the terms that are non-redacted.</p> <p>15:08:13 2 MR. MOONEY: Yes, Your Honor is right that we as</p> <p>15:08:16 3 you pointed out to counsel at Qualcomm, having redacted that</p> <p>15:08:19 4 information we are not going to be able to rely what is</p> <p>15:08:22 5 beneath those redactions to make that argument, that's</p> <p>15:08:25 6 right.</p> <p>15:08:25 7 THE COURT: You're not going to be able to argue</p> <p>15:08:27 8 that you're changing terms or that you will change terms</p> <p>15:08:32 9 that have been redacted in any way. So, if, for example,</p> <p>15:08:37 10 you can't say whatever is in appendix A, you can't say well</p> <p>15:08:43 11 -- annex A, we're not going to change what we do in annex A</p> <p>15:08:47 12 because you never disclosed what you did previously so you</p> <p>15:08:50 13 can't say how you're going to change it, right?</p> <p>15:08:53 14 MR. MOONEY: I believe Your Honor would not let</p> <p>15:08:54 15 us get away with that. We would not be able to rely on any</p> <p>15:08:59 16 redacted information.</p> <p>15:09:00 17 THE COURT: And your expert hasn't given any</p> <p>15:09:02 18 specifics so you can't come in later with some specifics, is</p> <p>15:09:05 19 that right?</p> <p>15:09:05 20 MR. MOONEY: Well, the expert, yes, Your Honor,</p> <p>15:09:07 21 I didn't see in looking at Mr. Schoettelkotte's expert</p> <p>15:09:11 22 report, the passages that we were pointed to, any statements</p> <p>15:09:14 23 about changes being made to ALAs, any reliance on any</p> <p>15:09:19 24 redacted material, in fact, Mr. Schoettelkotte had the very</p> <p>15:09:22 25 same redacted documents that Qualcomm's experts had. I have</p>	<p style="text-align: center;">43</p> <p>15:10:37 1 those employees had, we had produced 1.5 million pages of</p> <p>15:10:42 2 documents --</p> <p>15:10:43 3 THE COURT: They had no idea, when they took</p> <p>15:10:45 4 those depositions, they couldn't say, Mr. Abbey, what did</p> <p>15:10:48 5 you discuss with the expert?</p> <p>15:10:50 6 MR. MOONEY: I agree with that, Your Honor.</p> <p>15:10:51 7 THE COURT: Okay.</p> <p>15:10:52 8 MR. MOONEY: But Your Honor, that's not unlike</p> <p>15:10:55 9 --</p> <p>15:10:55 10 THE COURT: I think that's what Mr. Blumenfeld</p> <p>15:10:57 11 was getting at, he's saying I can't have the same</p> <p>15:11:00 12 discussions with these folks and ask, you know, have my</p> <p>15:11:04 13 expert ask them questions because fact discovery is over.</p> <p>15:11:10 14 MR. MOONEY: It is true, Your Honor --</p> <p>15:11:11 15 THE COURT: He can't ask about what they</p> <p>15:11:14 16 discussed with the expert.</p> <p>15:11:15 17 MR. MOONEY: It is true that in this case</p> <p>15:11:17 18 Qualcomm's -- if I'm following this, Qualcomm's counsel was</p> <p>15:11:21 19 not able to depose ARM employees after ARM's expert put in</p> <p>15:11:26 20 reports, that's true. That's true in every case. What is</p> <p>15:11:30 21 also true in this case --</p> <p>15:11:31 22 THE COURT: Yeah, but what's not true in every</p> <p>15:11:33 23 case is every -- my gosh, we have from footnote 196 through</p> <p>15:11:38 24 at least -- through at least footnote 219, there is nothing</p> <p>15:11:43 25 else other than discussion, or maybe a deposition.</p>
<p style="text-align: center;">42</p> <p>15:09:26 1 heard for the first time today a complaint that our expert</p> <p>15:09:29 2 spoke to some ARM employees. I have not heard that before</p> <p>15:09:33 3 in this case --</p> <p>15:09:34 4 THE COURT: Well, I saw something in the papers</p> <p>15:09:36 5 saying they didn't give them the licenses or maybe they gave</p> <p>15:09:40 6 them redacted versions of licenses, but I did see something</p> <p>15:09:44 7 saying he's not opining based on the licenses, he's opining</p> <p>15:09:49 8 based on something else.</p> <p>15:09:50 9 MR. MOONEY: Our expert, both Mr. Schoettelkotte</p> <p>15:09:53 10 and others did have conversations with some ARM employees in</p> <p>15:09:56 11 connection with preparing the report, just as Qualcomm's</p> <p>15:09:59 12 expert spoke to Qualcomm employees. I would like to say</p> <p>15:10:03 13 though, that, Your Honor just heard that Qualcomm did not</p> <p>15:10:06 14 have a chance to have conversations with the people that</p> <p>15:10:08 15 Mr. Schoettelkotte spoke to. They did. They deposed these</p> <p>15:10:12 16 people and I was present at those depositions.</p> <p>15:10:14 17 THE COURT: And did this come before or after</p> <p>15:10:16 18 those depositions?</p> <p>15:10:17 19 MR. MOONEY: This expert report was served a few</p> <p>15:10:20 20 weeks after the fact depositions.</p> <p>15:10:22 21 THE COURT: So they didn't have a chance to ask</p> <p>15:10:24 22 because they didn't know that Mr. Abbey and Mr. Williamson</p> <p>15:10:29 23 had discussions with Mr. Schoettelkotte, right?</p> <p>15:10:31 24 MR. MOONEY: I would not agree with that. They</p> <p>15:10:33 25 knew what -- they knew the sphere of responsibility that</p>	<p style="text-align: center;">44</p> <p>15:11:49 1 MR. MOONEY: I agree with Your Honor that</p> <p>15:11:51 2 Mr. Schoettelkotte in particular had many discussions with</p> <p>15:11:54 3 our employees and this is a heavily footnoted report. Those</p> <p>15:11:58 4 are not the only sources Mr. Schoettelkotte relied on by any</p> <p>15:12:02 5 means.</p> <p>15:12:02 6 THE COURT: It is the only source in what I</p> <p>15:12:04 7 have.</p> <p>15:12:04 8 MR. MOONEY: It is the only source in the four</p> <p>15:12:06 9 pages that Your Honor has been handed from the report,</p> <p>15:12:09 10 Mr. Schoettelkotte has a schedule of information that was</p> <p>15:12:11 11 relied on that includes many thousands of documents in the</p> <p>15:12:14 12 case, many thousands of transcripts and exhibits in addition</p> <p>15:12:18 13 --</p> <p>15:12:18 14 THE COURT: So let's say -- and I'll give the</p> <p>15:12:23 15 third parties a chance to weigh in on this, too, tell me</p> <p>15:12:29 16 about the confidentiality. We have a protective order, we</p> <p>15:12:33 17 have an outside counsel only provision. To say that this</p> <p>15:12:38 18 stuff is at risk of all of the comments were sort of generic</p> <p>15:12:44 19 saying this is going to give Qualcomm a competitive</p> <p>15:12:47 20 advantage. The way it gives Qualcomm a competitive</p> <p>15:12:50 21 advantage is if the information is given to outside counsel</p> <p>15:12:54 22 and outside counsel gives it to Qualcomm, which is quite an</p> <p>15:13:02 23 accusation.</p> <p>15:13:03 24 So why is the protective order not sufficient?</p> <p>15:13:07 25 MR. MOONEY: Well, as Your Honor knows, the law</p>

45

15:13:10 **1** is clear that the protective order isn't sufficient to
 15:13:13 **2** require parties to produce information that's not relevant
 15:13:16 **3** in the case.
 15:13:17 **4** THE COURT: Let's say I'm not convinced that
 15:13:19 **5** it's not relevant.
 15:13:20 **6** MR. MOONEY: Your Honor is right, we are not
 15:13:21 **7** suggesting that Qualcomm outside counsel is going to
 15:13:25 **8** deliberately disclose this information to anybody, that's
 15:13:28 **9** not the concern. The concern is that this is highly
 15:13:30 **10** confidential competitive information that goes to the very
 15:13:34 **11** core of our business and to the very core of our
 15:13:38 **12** competitor's business and this is information that could be
 15:13:40 **13** misused by our competitors and our customers. And that any
 15:13:45 **14** risk that this information is inadvertently specifically or
 15:13:50 **15** generally used or disclosed by any counsel or anyone else
 15:13:54 **16** involved in the case who might have access to this
 15:13:56 **17** information under the protective order, which certainly
 15:14:00 **18** isn't just counsel sitting at the table is enough of a risk
 15:14:03 **19** that we worked very carefully with our customers, Apple
 15:14:08 **20** here, to remove as many --
 15:14:11 **21** THE COURT: You haven't worked at all with
 15:14:12 **22** anyone on the [REDACTED], that's just a big fat
 15:14:17 **23** no, right? You don't even have the first page of it that
 15:14:20 **24** says agreement.
 15:14:21 **25** MR. MOONEY: It is true that the [REDACTED]

46

15:14:24 **1** 2023 has not been produced and on that, I would let [REDACTED]
 15:14:29 **2** speak further.
 15:14:29 **3** If you have any other further questions for me,
 15:14:32 **4** I'm happy to address them.
 15:14:34 **5** THE COURT: All right. Apple.
 15:14:37 **6** MS. CANNOM: Thank you, Your Honor. Hannah
 15:14:40 **7** Cannom on behalf of [REDACTED]. A couple of points that I
 15:14:43 **8** think we need to look at. First of all, it's from Judge
 15:14:46 **9** Hatcher's order where she says that balancing the minimal
 15:14:50 **10** relevance when combined with the harm of disclosure --
 15:14:53 **11** THE COURT: I might think it's a little bit more
 15:14:55 **12** relevant than she does.
 15:14:58 **13** MS. CANNOM: What she then goes on to say it
 15:15:01 **14** will necessarily need to generate generalized information
 15:15:03 **15** from the ARM clients. This is different than a source code
 15:15:05 **16** situation where the source code is in a room and what we're
 15:15:07 **17** worried about is inadvertent disclosure of large swaths of
 15:15:11 **18** code. Here we have information that once it's heard --
 15:15:15 **19** THE COURT: Tell me what exactly that means,
 15:15:18 **20** necessarily -- I don't know why that is, so why is it
 15:15:23 **21** different than you have source code and you say we can't
 15:15:30 **22** make out an infringement case because, you know, the source
 15:15:34 **23** code doesn't have this, or we can make out an infringement
 15:15:38 **24** case so that, therefore, they are, you know, confirming that
 15:15:41 **25** the source code shows that something works. Why -- like,

47

15:15:45 **1** why is that different from this? Why do you think that if
 15:15:52 **2** someone, outside counsel for Qualcomm gets it, like what is
 15:15:56 **3** -- give me an example, what necessarily would they have to
 15:15:59 **4** disclose that's so -- that's so secret that it would be
 15:16:04 **5** harmful.
 15:16:05 **6** MS. CANNOM: Right. So speaking generally about
 15:16:06 **7** the termination provision, if they were entitled to see the
 15:16:10 **8** termination provision, then they would have to tell their
 15:16:15 **9** client whether the termination provision was similar or
 15:16:17 **10** different and that's why that mattered to the specific issue
 15:16:20 **11** here.
 15:16:21 **12** There are also other, you know, certain
 15:16:23 **13** licensing terms --
 15:16:25 **14** THE COURT: Well, I mean the termination
 15:16:26 **15** provision, that wasn't even something -- that was redacted
 15:16:29 **16** in the Google one, so I'm not sure why I understand that's
 15:16:33 **17** so secretive.
 15:16:35 **18** MS. CANNOM: And [REDACTED] position is that
 15:16:38 **19** everything that's within the [REDACTED] is very highly
 15:16:41 **20** protected even within [REDACTED].
 15:16:44 **21** THE COURT: That assumes a bit much to me.
 15:16:47 **22** You're telling me the very first words that say this ALA
 15:16:51 **23** between [REDACTED] and ARM, that's super secret. Come on, right
 15:16:54 **24** then you're losing a little bit of credibility because
 15:16:57 **25** you're not even -- I mean, that's not -- let's put it this

48

15:17:00 **1** way. The Third Circuit test for confidentiality, you didn't
 15:17:05 **2** meet it when you're telling me that. I'm supposed to go
 15:17:09 **3** line by line in things according to the Third Circuit. So
 15:17:13 **4** you just saying there is an agreement, but you can't even
 15:17:17 **5** see who signed it tells me right then that you're being
 15:17:21 **6** overly inclusive and you're not encouraging me to follow the
 15:17:26 **7** Third Circuit's guidance on confidentiality.
 15:17:30 **8** MS. CANNOM: Understood, Your Honor. Your
 15:17:33 **9** Honor, and if you were to order that [REDACTED] would have to
 15:17:36 **10** produce a redacted version in line with the other ALAs, that
 15:17:40 **11** would be certainly something we would do. Our concern here,
 15:17:43 **12** however, is that the clearly defined serious injury that
 15:17:47 **13** [REDACTED] has vis-a-vis its competitor and more broadly --
 15:17:50 **14** THE COURT: I'm still not getting it. You're
 15:17:52 **15** telling me it's so harmful to you if the example you gave
 15:17:57 **16** me, the termination provisions were disclosed, yet other
 15:18:02 **17** competitors, termination provisions are disclosed, and maybe
 15:18:08 **18** there is something super secret in [REDACTED] termination
 15:18:12 **19** provision, but the fact that it sort of undermines your
 15:18:18 **20** argument when other competitors are like okay, you can't see
 15:18:21 **21** how much we pay, but you can see what happens if we
 15:18:24 **22** terminate or how we terminate.
 15:18:26 **23** MS. CANNOM: To be clear, there are multiple
 15:18:28 **24** other ALAs that have been produced in redacted material
 15:18:32 **25** here. What we're concerned is the most recent one which has

EXHIBIT 8

1
2 IN THE UNITED STATES DISTRICT COURT
3 FOR THE DISTRICT OF DELAWARE
C.A. No. 24-490-MN

-----x
4 QUALCOMM INCORPORATED, a Delaware
5 corporation, QUALCOMM TECHNOLOGIES, INC.,
a Delaware corporation,

6 Plaintiffs,

7 - against -

8 ARM HOLDINGS PLC., f/k/a ARM LTD., a U.K.
corporation

9 Defendant.
10
-----x

11 June 20, 2025

12 9:20 a.m.

13
14 *CONFIDENTIAL*

15 *ATTORNEYS' EYES ONLY*

16
17 VIDEOTAPED DEPOSITION of MARTIN
18 WEIDMANN, held at the offices of PAUL WEISS
19 RIFKIND WHARTON & GARRISON, LLP, located at
20 1285 Avenue of the Americas, New York, New
21 York 10019, before Anthony Giarro, a
22 Registered Professional Reporter, a Certified
23 Realtime Reporter and a Notary Public of the
24 State of New York.
25

<p>Page 50</p> <p>1 MARTIN WEIDMANN – CONFIDENTIAL – ATTORNEYS' EYES ONLY</p> <p>[REDACTED]</p>	<p>Page 52</p> <p>1 MARTIN WEIDMANN – CONFIDENTIAL – ATTORNEYS' EYES ONLY</p> <p>[REDACTED]</p>
<p>Page 51</p> <p>1 MARTIN WEIDMANN – CONFIDENTIAL – ATTORNEYS' EYES ONLY</p> <p>[REDACTED]</p>	<p>Page 53</p> <p>1 MARTIN WEIDMANN – CONFIDENTIAL – ATTORNEYS' EYES ONLY</p> <p>[REDACTED]</p> <p>23 MR. BRALY: I'm going to</p> <p>24 mark QCX 51.</p> <p>25 (The above-referred-to</p>

14 (Pages 50 - 53)

Page 56

1 MARTIN WEIDMANN -- CONFIDENTIAL -- ATTORNEYS' EYES

ONLY

2 [REDACTED]
[REDACTED]

§ 87(2)(b) § 87(2)(b) § 87(2)(b)

[REDACTED]

20 Q [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] ?

24 MR. EMERICK: Objection,
25 form.

Page 57

1 MARTIN WEIDMANN -- CONFIDENTIAL -- ATTORNEYS' EYES

ONLY

2 A One way to summarize it
3 would be that each major version of the
4 architecture builds as a foundation on
5 the previous major version of the

6 architecture.

7 Q [REDACTED]

[REDACTED]

I [REDACTED]

[REDACTED]

[REDACTED] [REDACTED]

[REDACTED]

24 So here, we are saying that

25 what we predicted at the time was that

EXHIBIT 9

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

ARM LTD.,

Plaintiff,

v.

QUALCOMM INC., QUALCOMM
TECHNOLOGIES, INC. and NUZIA, INC.,

Defendants.

C.A. No. 22-1146 (MN)

VERDICT FORM

In answering the following questions and filling out this Verdict Form, you are to follow all of the instructions I have given you in the Court's charge. Your answer to each question must be unanimous.

We, the jury in this case, find the following answers to the following questions:

Arm's Claims for Breach of Contract

Question 1: Did Arm prove by a preponderance of the evidence that Nuvia breached Section 15.1(a) of the Nuvia ALA?

YES
For Arm

NO
For Nuvia

YES _____ NO _____

Question 2: Did Arm prove by a preponderance of the evidence that Qualcomm breached Section 15.1(a) of the Nuvia ALA?

YES
For Arm

NO
For Qualcomm

YES _____ NO ✓ _____

Qualcomm's Claim

Question 3: Did Qualcomm prove by a preponderance of the evidence that the Qualcomm CPUs that include designs acquired in the Nuvia acquisition are licensed under the Qualcomm ALA?

YES
For Qualcomm

NO
For Arm

YES ✓ _____ NO _____

CONCLUSION

You have reached the end of the verdict form. Review the completed form to ensure that it accurately reflects your unanimous determinations. All jurors should then sign and date the Verdict Form in the space below and notify the Court Security Officer that you have reached a verdict.

Date: 12/20/24

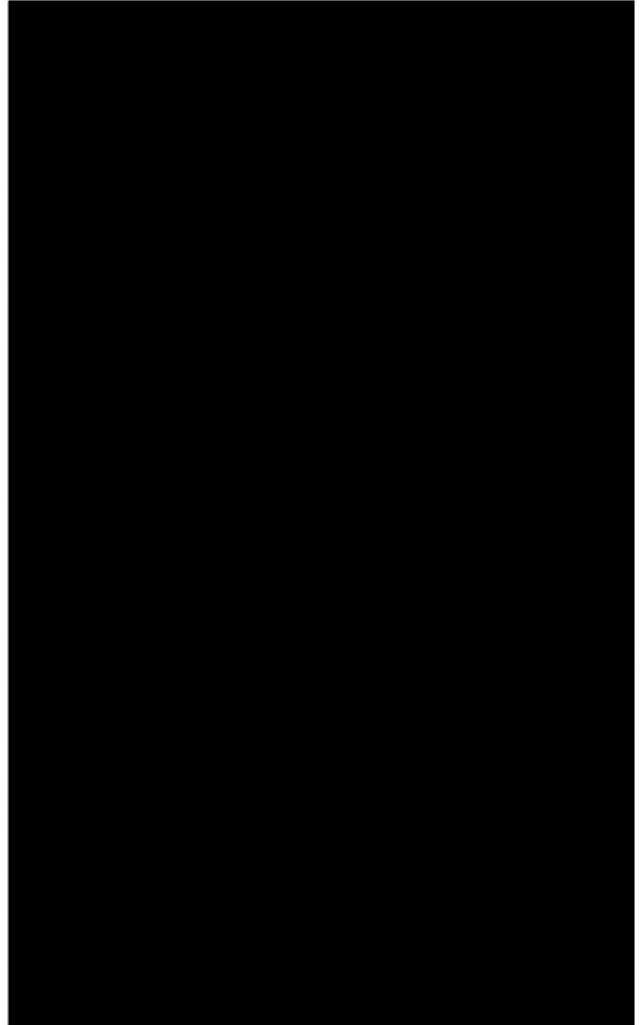


EXHIBIT 10

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

ATM LTD.,)	
)	
Plaintiff,)	
)	
v.)	
)	C.A. No. 22-1146 (MN)
QUALCOMM INC., QUALCOMM)	
TECHNOLOGIES, INC. and NUVIA, INC.,)	
)	
Defendants.)	

FINAL JUDGMENT

At Wilmington this 30th day of September 2025, the Court having held a jury trial (*see* D.I. 588, 589, 590, 591, 592), the jury having rendered a unanimous verdict on Questions 2 and 3 and reaching a deadlock on Question 1 on December 20, 2024 (*see* D.I. 572), and the Court having issued its Memorandum Opinions and Orders resolving the parties' post-trial motions September 30, 2025 (D.I. 631, 632), pursuant to Rules 50 and 59 of the Federal Rules of Civil Procedure, IT IS HEREBY ORDERED that:

1. Judgment is entered in favor of Defendants Nuvia Inc. ("Nuvia"), Qualcomm Inc., and Qualcomm Technologies, Inc. ("Qualcomm") (together, "Defendants") and against Plaintiff ARM Ltd. ("ARM" or "Plaintiff"), that (1) Nuvia did not breach the Nuvia ALA, (2) Qualcomm did not breach the Nuvia ALA, and (3) Qualcomm was licensed under the Qualcomm ALA.

IT FURTHER ORDERED that the deadline for any party to move for costs and attorneys' fees (including under 35 U.S.C. § 285) is extended to within fourteen (14) days after the time for appeal has expired or within fourteen (14) days after issuance of the mandate from the appellate court, whichever is later, and no party shall file any such motion before that time.



The Honorable Maryellen Noreika
United States District Judge

EXHIBIT 11

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

QUALCOMM INCORPORATED,)	
a Delaware corporation; and)	
QUALCOMM TECHNOLOGIES, INC.,)	
a Delaware corporation,)	
)	
Plaintiffs,)	C.A. No. 24-490 (MN)
)	
v.)	SUBMITTED UNDER SEAL –
)	HIGHLY CONFIDENTIAL –
ARM HOLDINGS PLC., f/k/a ARM LTD.,)	ATTORNEYS' EYES ONLY
a U.K. corporation,)	
)	
Defendant.)	

**PLAINTIFFS' LETTER TO SPECIAL MASTER HELENA C. RYCHLICKI IN
SUPPORT OF THEIR MOTION TO STRIKE THE EXPERT REPORTS OF ARM'S
EXPERTS MICHAEL C. BROGIOLI, PH.D. & STEVEN RICHARDS, CPA**

OF COUNSEL:

Catherine Nyarady
Jacob A. Braly
Jacob Apkon
PAUL, WEISS, RIFKIND,
WHARTON & GARRISON LLP
1285 Avenue of the Americas
New York, NY 10019
(212) 373-3000

Adam Basner
PAUL, WEISS, RIFKIND,
WHARTON & GARRISON LLP
2001 K Street, NW
Washington, DC 20006
(202) 223-7300

Karen L. Dunn
William A. Isaacson
Melissa F. Zappala
DUNN, ISAACSON, RHEE LLP
401 Ninth Street NW
Washington, DC 20004
(202) 240-2900

MORRIS, NICHOLS, ARSHT & TUNNELL LLP
Jack B. Blumenfeld (#1014)
Jennifer Ying (#5550)
Travis Murray (#6882)
1201 North Market Street
P.O. Box 1347
Wilmington, DE 19899
(302) 658-9200
jblumenfeld@morrisnichols.com
jying@morrisnichols.com
tmurray@morrisnichols.com

Attorneys for Plaintiffs

Erin J. Morgan
DUNN, ISAACSON, RHEE LLP
11 Park Place
New York, NY 10007
(202) 240-2900

September 16, 2025

Dear Special Master Rychlicki:

Qualcomm submits this letter in support of its motion to strike the expert reports of Michael C. Brogioli, Ph.D. (Ex. 1) and Steven Richards, CPA (Ex. 2).

I. The Brogioli and Richards Reports Are Not Proper Rebuttal.

On August 8, 2025, Qualcomm served two expert reports: one from law professor Eric Posner relating to the anticompetitive effects of Arm's unfair competition (Ex. 3), and one from Dr. Patrick Kennedy, a damages expert (Ex. 4). Arm served four expert reports on September 5, 2025, including the Brogioli and Richards reports. Pursuant to the Scheduling Order, the only expert reports that could be properly served on that date were those that "contradict[ed] or rebut[ted] evidence on the same matter identified by another party." D.I. 44 ¶ 7(g)(i). But the Brogioli and Richards reports "do not directly contradict or rebut the actual contents of [the] prior report[s]" and accordingly "do not qualify as proper rebuttal or reply reports." See *Withrow v. Spears*, 967 F. Supp. 2d 982, 1002 (D. Del. 2013). Tellingly, on the parties' September 15 meet and confer, in response to repeated questions, [REDACTED]

[REDACTED] Ex. 5 at 37:19-39:11. Indeed, the reports themselves indicate that they are not rebuttal.

Brogioli was [REDACTED]

[REDACTED] Ex. 1 ¶¶ 369-394. But neither of Qualcomm's experts provided any "technical assessment" on any of these topics.¹ Though Brogioli claims that his 419-paragraph report is responsive to one paragraph in the Kennedy report (Ex. 4 ¶ 32) and five paragraphs in the Posner report (Ex. 3 ¶¶ 22, 28, 61, 65, and 77), those paragraphs contain recitation of Qualcomm's factual allegations—not technical opinions.² See Ex. 1 ¶¶ 22, 167-168, 396. And entire sections of Brogioli's report on [REDACTED] do not reference Qualcomm's experts at all. See Ex. 1 ¶¶ 369-394.

Richards was asked by Arm's counsel to opine on [REDACTED]

[REDACTED] Ex. 2 ¶ 2. Again, neither of Qualcomm's experts provided any opinion regarding Qualcomm's public disclosures. And, again, Richards's 94-paragraph report is not responsive to the three paragraphs in the Kennedy report (Ex. 4 ¶¶ 118, 124, and 125) and one paragraph in the Posner

¹ Dr. Kennedy is an economist and Professor Posner is an attorney. They did not (and could not) offer any "technical assessment."

² The paragraph in Kennedy's report that Brogioli is purportedly responding to plainly begins: [REDACTED] Ex. 4 ¶ 32.

report (Ex. 3 ¶ 65) that he purportedly rebuts. *See id.* As in Brogioli, each Kennedy report paragraph Richards cites expressly says it is reciting what [REDACTED] Ex. 2 ¶ 62. And the Posner report paragraph simply states, among other points unrelated to the October 22 letter, that [REDACTED] Ex. 2 ¶ 63; Ex. 3 ¶ 65.

Under Rule 26, “rebuttal reports are intended to contradict or rebut evidence on the same subject matter in the opposing party’s initial report...[I]t is insufficient for a report to ‘simply address the same general subject matter as a previously-submitted report’; the report must contradict or rebut the actual contents of the initial report.” *Wang v. Injective Labs Inc.*, 2025 WL 775530, at *1 (D. Del. Mar. 11, 2025) (citation omitted).

Brogioli’s and Richard’s “scant mention[s]” of Qualcomm’s experts and “discuss[ion of] different and largely distinct topics” confirm that these are not proper rebuttal reports. *Withrow*, 967 F. Supp. 2d at 1002-03. Where, as here, a purported rebuttal expert “does not engage with, or even cite to” an opening expert’s opinions for entire sections of his report, his “opinions are not appropriate subject matter for a rebuttal report.” *Wang*, 2025 WL 775530, at *2. The Brogioli and Richards reports offer new opinions that Arm cannot appropriately raise now.³

II. The Brogioli and Richards Reports Should Be Stricken

As the Brogioli and Richard reports are not appropriate rebuttal, the inquiry turns to whether Rule 37 and the *Pennypack* factors⁴ favor exclusion. *Wang*, 2025 WL 775530, at *4 (analyzing non-rebuttal portions of expert reports under *Pennypack*). A party that fails to disclose information or identify a witness as required “is not allowed to use that information or witness to supply evidence on a motion, at a hearing, or at a trial, unless the failure was substantially justified or is harmless.” Fed. R. Civ. P. 37(c)(1). The Third Circuit has accordingly “upheld the exclusion of expert witnesses as an appropriate sanction for a party’s violation of a ... pre-trial order.” *Allen v. Parkland Sch. Dist.*, 230 F. App’x 189, 194 (3d Cir. 2007) (quotation omitted).

³ On the meet and confer, Arm declined to take the position that its reports were served in support of any of its affirmative defenses. *See, e.g.*, Ex. 5 at 34:16-18 ([REDACTED]). This is not surprising, as any such opinions would have been due on August 8. *See* D.I. 44 ¶ 7(g)(i) (“For the party who has the initial burden of proof on the subject matter, the initial Federal Rule of Civil Procedure 26(a)(2) disclosure of expert testimony is due on or before August 8, 2025.”); *Lucent Techs., Inc. v. Newbridge Networks Corp.*, 168 F. Supp. 2d 181, 242 (D. Del. 2001) (party asserting an affirmative defense bears burden of proving it). Arm cannot now argue otherwise.

⁴ The *Pennypack* factors are: (1) the surprise or prejudice to the moving party; (2) the ability to cure such prejudice; (3) the extent to which the evidence would disrupt the order and efficiency of trial; (4) the offering party’s bad faith or willfulness; and (5) the importance of the expert opinions at issue. *Wang*, 2025 WL 775530, at *2.

Where, as here, the party who breaches its obligations is engaged in sophisticated litigation and “represented by competent counsel,” the District of Delaware has been “more willing to exclude evidence without a strict showing that each of the *Pennypack* factors has been satisfied.” *Id.* at *3 (quotation omitted) (collecting cases). Arm and its sophisticated counsel should not be permitted to ignore Court orders, and each of the *Pennypack* factors favors exclusion here.

With respect to the first two *Pennypack* factors, Arm’s improper reports have prejudicially left Qualcomm with “two bad options: either scramble to have an expert respond in an effort to preserve an expert opinion on the [] allegations if the Court allowed them into the case; or offer no response and risk not preserving an opinion for trial if the pending Motion to Strike was denied.” *Galderma Lab’ys, L.P. v. Amneal Pharms., LLC*, 2018 WL 508876, at *2 (D. Del. Jan. 22, 2018) (quotation omitted).⁵ Qualcomm is also prejudiced by “hav[ing] to spend additional time and money to refute [Arm’s] new theories” if these reports are not stricken. *St. Clair Intell. Prop. Consultants, Inc. v. Matsushita Elec. Indus. Co., Ltd.*, 2012 WL 1015993, at *8 (D. Del. Mar. 26, 2012), *aff’d*, 525 F. App’x 915 (3d Cir. 2013). Even where a prejudiced party can depose a late-disclosed expert and file a report rebutting his opinions, “it would be unjust to penalize [the moving party] for doing its best under difficult circumstances” such that the *Pennypack* factors concerned with prejudice can still favor exclusion. *Cirba Inc. v. VMware, Inc.*, 2023 WL 6799267, at *3 (D. Del. Mar. 30, 2023) (quotation omitted). Given that expert discovery is supposed to close in just 17 days (on October 3), with dispositive and *Daubert* motions to be filed just a few weeks later on October 24, the additional time that Qualcomm would have to spend addressing these improper reports would incurably take away from time “it would otherwise spend preparing dispositive [and *Daubert*] motions.” *Wang*, 2025 WL 775530, at *4.

On the third *Pennypack* factor, the “further delay and prolonged disruption” necessitated by additional responsive expert reports and discovery prompted by inappropriately disclosed reports can satisfy concern for disruption to an orderly trial. *St. Clair*, 2012 WL 1015993, at *8. This applies even where a trial date has not been set, unlike here where trial has long been set for March 2026. Any delay to the quickly approaching end of expert discovery and dispositive motion dates resulting from Arm’s failure to comply with the Scheduling Order will prejudice Qualcomm, as the Court seeks to close dispositive motion briefing approximately four months before the pretrial conference. *See* Ex. 6 (J. Noreika Form Scheduling Order ¶ 9); D.I. 44 ¶¶ 9(a), 12 (briefing on dispositive motions closes November 14; pretrial conference is March 2). Yet that may be precisely Arm’s strategy: Arm does not want this trial to proceed as scheduled and raised with Judge Noreika at the August 29 hearing on the parties’ motions for judgment as a matter of law in the *Arm v. Qualcomm* case its view that this trial should be delayed until the conclusion of yet-unfiled appeals in that prior case. Ex. 7 at 46:16-47:16. The Court declined to engage on Arm’s efforts to delay this trial, and Qualcomm should not be forced to suffer a delay now because of Arm’s non-compliant disclosures. Additionally, allowing these improper reports and associated testimony will disrupt the orderly and efficient progression of trial because Arm will put on

⁵ Unlike in *Withrow*, where the court did not find prejudice, Qualcomm did not “receive[] a preview of the content” of the Brogioli or Richards reports, 967 F. Supp. 2d at 1004, and had to start from scratch in considering its response.

purported rebuttal witnesses that are not actually contradicting anything the jury has heard from Qualcomm's witnesses.

With respect to the fourth factor, these improper rebuttal reports, along with Arm's late notification of third parties whose agreements with Arm are the subject of Qualcomm's document requests and late production of critical agreements it repeatedly represented it had already provided,⁶ "are part of a developing pattern of untimeliness, which weighs in favor of excluding" the reports. *Wang*, 2025 WL 775530, at *4 (quotation omitted); *see also Cirba*, 2023 WL 6799267, at *3 (striking expert evidence where there was no direct evidence of bad faith or willfulness, but there were "previous instances in which [the late-disclosing party's] conduct was questioned"). Arm has not offered any excuse for its improper rebuttals, claiming instead that it complied with the Scheduling Order. Ex. 5 at 38:19-39:4. Ultimately, any justification Arm may volunteer for its improper reports is not dispositive as there need not be proof that Arm acted willfully or in bad faith to be subject to the exclusion of its inappropriately disclosed evidence. *See St. Clair*, 2012 WL 1015993, at *8 (excluding supplemental report without any allegation or evidence of bad faith or willfulness).

Finally, the opinions Arm seeks to introduce from the Brogioli and Richards reports are either unimportant or irrelevant to the overall case and Arm has other options for presenting similar evidence, if appropriate. Arm is the defendant in this case; it does not bear the initial burden of proof on anything besides the affirmative defenses it has chosen to assert and Arm did not claim on the parties' meet and confer that it needs Brogioli or Richards to support those defenses. *See Wang*, 2025 WL 775530, at *4 (excluding new opinions where not "genuinely critical" to case); Ex. 5.⁷ Arm's fact witnesses can presumably explain Arm's own verification-related technology and v10 features to the jury in place of Brogioli (who has no direct experience with Arm's

⁶ See Qualcomm's 9/15/2025 Ltr. Regarding Newly-Discovered Facts and Subsequent Events.

⁷ Arm may try to change its position from the meet and confer and claim it needs Brogioli for its unclean hands defense premised on the theory that "Qualcomm continues to attempt to benefit from its improper acquisition of Nuvia technology and the related material breach of the Nuvia ALA by wrongly insisting that the unlicensed Nuvia technology is licensed under the Qualcomm ALA and seeking to enforce verification obligations as to that unlicensed technology." D.I. 234 at 43. Putting aside that Arm should not be allowed to assert a changed purported justification for its improper report and that this argument would not cure untimeliness, a jury already rejected Arm's defense when it found "that the Qualcomm CPUs that include designs acquired in the Nuvia acquisition are licensed under the Qualcomm ALA." Ex. 8.

As noted when Your Honor asked, [REDACTED]
[REDACTED] Arm believes that [REDACTED] Ex. 9 at 188:14-23. The Court has indicated that it will issue its post-trial opinion as soon as possible (Ex. 7 at 47:23-48:3), at which point Qualcomm expects Arm's unclean hands defense will become entirely precluded.

technology anyway⁸), and Arm’s attorneys can make the legal arguments to the Court that Richards is proffering, if such evidence or arguments are not otherwise excluded. Any claimed importance Arm ascribes to these reports cannot “outweigh” the prejudice they cause to Qualcomm. *360Heros, Inc. v. GoPro, Inc.*, 2022 WL 2063262, at *2 (D. Del. June 8, 2022) (denying requests to submit supplemental expert reports because they would necessitate additional depositions and “at least consideration of rebuttal reports” four months from trial).

Arm’s improper disclosure of the non-rebuttal opinions in the Brogioli and Richards reports was not “substantially justified” or “harmless,” and the reports should be stricken.

Respectfully,

/s/ Jennifer Ying

Jennifer Ying (#5550)
Words: 2,395

⁸ Brogioli states that [REDACTED]
[REDACTED], Ex. 1 ¶ 154.

EXHIBIT 12

**HIGHLY CONFIDENTIAL – ATTORNEYS’ EYES ONLY
SUBJECT TO STIPULATION AND ORDER
FOR THE PRODUCTION AND EXCHANGE OF CONFIDENTIAL INFORMATION**

IN THE UNITED STATES DISTRICT COURT FOR THE DISTRICT OF DELAWARE

QUALCOMM INCORPORATED A DELAWARE
CORPORATION,
QUALCOMM TECHNOLOGIES, INC.,

Plaintiff,

-against-

ARM HOLDINGS PLC., f/k/a ARM LTD.,
a U.K. corporation,

Defendants.

c.a. No. 24-490-MN

**REBUTTAL REPORT OF
STEVEN RICHARDS, CPA**

September 5, 2025

Table of Contents

I. Expert Disclosures	1
A. Nature of Assignment	1
B. Qualifications	2
C. Documents and Materials Considered	4
D. Compensation	4
E. Standards Governing my Work.....	4
II. Summary of Opinions	4
III. Relevant Factual and Regulatory Background.....	6
A. Background to the Parties	6
B. Breach Letter.....	7
C. Background to the Dispute.....	8
D. Public Company Disclosure Obligations	11
E. Investor Events.....	17
IV. Basis for Opinions and Analysis.....	19
A. Qualcomm was required to disclose the Breach Letter within its 2024 Form 10-K regardless of the publication of its contents in the Bloomberg Article.	19
B. Qualcomm’s public disclosures do not convey the significant harm resulting from the Breach Letter as alleged in the Second Amended Complaint.	21
V. Opinions and Conclusion	30
VI. SIGNATURE AND RIGHT TO MODIFY	31

HIGHLY CONFIDENTIAL – ATTORNEYS’ EYES ONLY

I. Expert Disclosures

A. Nature of Assignment

1. I have been retained by Kirkland and Ellis LLP (“Counsel”) for the defendant Arm Holdings PLC (“Arm”) in the civil case bearing the caption C.A. No. 24-490-MN pending in District Court for the District of Delaware brought by Qualcomm Incorporated and Qualcomm Technologies, Inc. (collectively, “Qualcomm”).
2. I have been asked by Counsel to review the documents provided, including publicly available information, and to provide my expert opinion on (1) whether Qualcomm was required to disclose the October 22, 2024 letter from Arm notifying it of a material breach of the Qualcomm Architecture License Agreement (LES-TLA-20039) (“the QC ALA”) (“the Breach Letter”) in its Form 10-K for the fiscal period ending September 29, 2024 (“2024 Form 10-K”) regardless of the publication of its contents in the Bloomberg Article;¹ (2) whether Qualcomm’s public disclosures convey the significant harm resulting from the Breach Letter or its publication in the Bloomberg Article as alleged in the Second Amended Complaint.² In addition, I was retained to consider and analyze the basis of the analysis expressed in paragraphs 118, 124 and 125 of the Expert Report of Dr. Patrick F. Kennedy, submitted on August 8, 2025 (the “Kennedy Report”). My analysis was limited only to those bases expressed in those paragraphs as they relate to his opinion. Further, I was retained to consider and analyze paragraph 65 of the Expert Report of Eric E. Posner submitted on August 8, 2025 (the “Posner Report”). My analysis was limited only to those bases expressed in the paragraph as it relates to his opinion.
3. To fairly evaluate Qualcomm’s public disclosures regarding the Breach Letter³ in respect of this opinion, it is necessary to assess Qualcomm’s disclosures against the Securities and Exchange Commission (“SEC”) public disclosure regulations and relevant generally accepted accounting principles (“US GAAP”). It is necessary to perform this evaluation from the perspective of Qualcomm at the time, in consideration of the facts it understood at the time, and without the benefit of hindsight.

¹ The article titled “ARM to scrap Qualcomm Chip Design License in Feud Escalation” published by Bloomberg on October 22, 2024, hereinafter referred to in this report as “The Bloomberg Article.” The article was updated on October 23, 2024. <https://www.bloomberg.com/news/articles/2024-10-23/arm-to-cancel-qualcomm-chip-design-license-in-escalation-of-feud?srnd=homepage-europe>.

² On June 3, 2025, Qualcomm filed a second amendment to its complaint filed in April 2022 hereinafter referred to in this report as the “Second Amended Complaint”.

HIGHLY CONFIDENTIAL – ATTORNEYS’ EYES ONLY

B. Qualifications

4. I am a Senior Managing Director in the Risk Advisory practice of Ankura Consulting Group, LLC (“Ankura”), where I specialize in complex accounting, auditing, and financial reporting and disclosure matters. I also lead Ankura’s Audit Advisory service offering, which advises auditors and law firms on audit and related regulatory matters including the assessment of compliance with auditing standards. I have over 28 years of experience as an accountant, auditor, regulator, forensic accountant, and accounting consultant. I provide a broad range of expert and consulting services involving corporate investigations, audit liability, accounting advisory, fraud examinations, dispute resolution, corporate governance and other services. I am a Certified Public Accountant (“CPA”).
5. Prior to joining Ankura in November 2016, I was a Partner in the Forensic Advisory practice at Deloitte LLP (“Deloitte”). I also served as a Senior Advisory Partner to Deloitte leadership and its Office of General Counsel regarding audit regulation, public policy matters, and regulatory enforcement matters. During my time at Deloitte, I provided advice on government, regulatory, and professional matters involving the audit practice. I also advised on audit regulatory issues involving public policy, inspections, standards, rules, litigation, and enforcement matters involving the Public Company Accounting Oversight Board (“PCAOB”), the Securities and Exchange Commission (“SEC”), and foreign audit and securities regulators.
6. Prior to joining Deloitte in 2015, I worked at the PCAOB, from March 2011 to February 2015. As the Special Adviser to Chairman James Doty, I provided advice on policy and operations for all aspects of PCAOB oversight, including the enforcement program, adjudication proceedings, standard setting, the domestic and international inspections program, the broker-dealer inspection program, and risk analysis. In this role, I advised the Chairman on auditors’ compliance or non-compliance with professional standards, including PCAOB Auditing Standards.
7. During my tenure at the PCAOB, I also served as Senior Adviser to Claudius Modesti, the Director of Enforcement and Investigations. I provided advice on all aspects of policy and operations for the enforcement program, including coordination with other domestic financial regulators, division-wide initiatives, division priorities, case assessment, and management.
8. From May 2004 until July 2008, I served as an Assistant Chief Accountant in the SEC’s Division of Enforcement Office of Chief Accountant in Washington, D.C. During my tenure at the SEC, I performed numerous fraud and financial reporting investigations involving SEC registrants, senior executives, external auditors, and other third parties. I routinely assessed auditors’ compliance with professional

HIGHLY CONFIDENTIAL – ATTORNEYS’ EYES ONLY

standards, including PCAOB Auditing Standards, and provided advice on recommendations on enforcement matters under the SEC Rules of Practice, including Rule 102(e).⁴

9. Before and after my work at the SEC, from April 2002 to May 2004 and from July 2008 to March 2011, I worked in the Forensic and Litigation Consulting practice at FTI Consulting, Inc. (“FTI”). During my time at FTI, I managed numerous multidisciplinary teams on high-profile matters, including one of the largest Ponzi schemes in history. During my tenure at FTI, I performed numerous forensic and internal investigations involving SEC registrants and regulated entities, privately-held companies, senior executives, external auditors, and other third parties. As part of these investigations, I routinely interacted with external auditors and assessed their compliance with professional obligations.
10. I started my career as an auditor at Arthur Andersen LLP, where, from June 1998 to April 2002, I performed financial statement audits of both publicly-traded and privately-held companies in a variety of industries.
11. I have also served as a member of accounting and auditing committees concerning fraud, including:
 - In 2015, I was named the Deloitte representative to the Center for Audit Quality (“CAQ”) – Anti-Fraud Collaboration (“AFC”).⁵ The mission of the CAQ’s AFC is to enhance the effectiveness of financial fraud risk management by promoting anti-fraud policies, procedures, controls, and practices, including those enhanced or enabled by technology.
 - From 2018 through 2021, I was a member of the American Institute of Certified Public Accountants (“AICPA”) Forensic and Litigation Services Fraud Task Force. The Fraud Task Force provides information to AICPA members regarding fraud detection, investigation, and prevention.
12. I am a frequent speaker at auditing, forensic accounting, and SEC and PCAOB enforcement conferences.
13. I received my bachelor’s degree in accounting from Washington & Jefferson College. I have been a CPA since 2002. I have an active CPA license in the state of Pennsylvania. I am a member of the AICPA and the Pennsylvania Institute of Certified Public Accountants. Consistent with the professional requirements, I have continued my professional education since becoming a CPA.

⁴ Specifically, the Suspension and Disbarment provisions of Rule 102(e) which provide the SEC with authority to, among other things, permanently or temporarily bar an accountant from appearing or practicing before the SEC for engaging in improper professional conduct involving failure to comply with applicable professional standards.

⁵ The AFC was formed in October 2010 by the CAQ, Financial Executives International (“FEI”), The Institute of Internal Auditors (“IIA”) and the National Association of Corporate Directors (“NACD”). The four organizations represent the significant components of the financial reporting supply chain: external auditors (through CAQ), company financial management (through FEI), internal audits (through IIA) and audit committees (through NACD).

HIGHLY CONFIDENTIAL – ATTORNEYS’ EYES ONLY

14. A copy of my curriculum vitae is attached as Exhibit 1 to this report.
15. Based on my knowledge, skills, experience, training, and education, I am qualified to provide an expert opinion on the above question presented in this case.

C. Documents and Materials Considered

16. I, and Ankura staff members working under my direct supervision, considered the documents, testimony transcripts, and other materials set forth in Exhibit 2 to this report. The opinions and conclusions in this report are based on review of the documents, testimony transcripts, and other materials I considered, as well as my knowledge, training, and experience.⁶
17. My opinions are based on information available to me as of the date of this report. It is possible that additional information may affect my opinions herein. I reserve the right, in the event further information becomes available, to modify or supplement my analysis and opinions.

D. Compensation

18. Ankura bills fees and expenses in this matter based on hourly rates and expenses incurred. Ankura is being compensated for my time at a rate of \$1,050 per hour and for the time of other staff members assisting on this engagement at hourly rates ranging from \$1,050 to \$410. No portion of my firm’s compensation (or my compensation) is dependent on my opinions or testimony or on the outcome of this matter.

E. Standards Governing my Work

19. I performed this engagement in accordance with the AICPA Statement on Standards for Forensic Services No. 1⁷ and the AICPA Code of Professional Conduct.⁸
20. This report should not be construed as expressing opinions on matters of law, which are outside of my expertise. However, to the extent I have interpreted conduct and evidence, those interpretations reflect my understanding from an accountant’s perspective.

II. Summary of Opinions

21. **Qualcomm was required to disclose the Breach Letter in its 2024 Form 10-K regardless of the publication of the Breach Letter’s contents in the Bloomberg Article.** Qualcomm disclosed the

⁶ There was no restriction on what documents and testimony I was able to review and consider.

⁷ Statement on Standards for Forensic Services No. 1.

⁸ AICPA Code of Professional Conduct, Effective December 15, 2014; Updated for all official releases through March 2025.

HIGHLY CONFIDENTIAL – ATTORNEYS’ EYES ONLY

Breach Letter, for the first time in the Consolidated Financial Statements filed in its 2024 Form 10-K within Note 7. Commitments and Contingencies – Legal and Regulatory Proceedings in the Notes to Consolidated Financial Statements (“Note 7”)⁹ as required by US GAAP.¹⁰ As disclosed: “On October 22, 2024, Arm provided us with a notice alleging that we have breached the Qualcomm ALA¹¹...Arm’s notice asserts that it will have the right to terminate the Qualcomm ALA if such alleged breaches are not cured within 60 days of such notice. We disagree with Arm’s allegations, including that we are in breach of the Qualcomm ALA.”¹² In substance, both US GAAP and Qualcomm’s own disclosure position requires that “[i]f there is at least a reasonable possibility that a material loss may have been incurred ... we disclose such fact.”^{13,14} [REDACTED]

[REDACTED]¹⁵ Because Qualcomm [REDACTED]¹⁶ and determined that there was “at least a reasonable possibility”¹⁷ [defined in US GAAP as more than remote and less than probable]¹⁸ that a “material loss”¹⁹ [the Breach Letter asserts the right to terminate the Qualcomm ALA if not cured in 60 days]²⁰ “may have been incurred,”²¹ the Breach Letter was required to be disclosed by both US GAAP and Qualcomm’s own disclosure position, in 2024 Form 10-K, irrespective of the reporting of the Breach Letter within the Bloomberg Article.

22. Qualcomm’s public disclosures do not convey the significant harm resulting from the Breach Letter or its publication in the Bloomberg Article as alleged in the Second Amended Complaint.

Qualcomm disclosed the Breach Letter, for the first time in the Consolidated Financial Statements filed in its 2024 Form 10-K within Note 7, as required by US GAAP. As disclosed: “On October 22, 2024, Arm provided us with a notice alleging that we have breached the Qualcomm ALA...Arm’s notice asserts that it will have the right to terminate the Qualcomm ALA if such alleged breaches are not cured within 60 days of such notice. We disagree with Arm’s allegations, including that we are in breach of the

⁹ Qualcomm Inc., Form 10-K, for the fiscal year ended September 29, 2024, p. F-23.

¹⁰ ASC 450-20, Loss Contingencies.

¹¹ This refers to the architecture license agreement between Arm and Qualcomm, the Qualcomm Architecture License Agreement (LES-TLA- 20039), which is the subject of the Breach Letter dated October 22, 2024 and is defined within the Breach Letter as the “Qualcomm ALA.” Hereinafter referred to in this report, any reference to this architectural license agreement will be referred to as the “QC ALA” unless referred to otherwise in the documentation quoted in this report.

¹² Qualcomm Inc., Form 10-K for fiscal year ended September 29, 2024, p. F-24.

¹³ FASB ASC. 450-20-50-5, Loss Contingencies, Unrecognized Contingencies.

¹⁴ Qualcomm Inc., Form 10-K for fiscal year ended September 29, 2024, p. F-13.

¹⁵ [REDACTED]

¹⁶ [REDACTED]

¹⁷ Qualcomm Inc., Form 10-K, for the fiscal year ended September 29, 2024, p. F-13.

¹⁸ FASB ASC. 450-20, Loss Contingencies, Glossary.

¹⁹ Qualcomm Inc., Form 10-K, for the fiscal year ended September 29, 2024, p. F-13.

²⁰ The Breach Letter, October 22, 2024.

²¹ Qualcomm Inc., Form 10-K, for the fiscal year ended September 29, 2024, p. F-13.

HIGHLY CONFIDENTIAL – ATTORNEYS’ EYES ONLY

Qualcomm ALA.”²² Qualcomm included risk factors specific to Regulatory and Legal Challenges and Intellectual Property in the Item 1A. Risk Factors section of the 2024 Form 10-K that referenced to the matters disclosed in Note 7.²³ With respect to these matters, Qualcomm disclosed: “[u]nfavorable resolution of one or more of these matters could have a material adverse effect on our business, results of operations, financial condition or cash flows.”²⁴ Qualcomm also disclosed: “[a]ny claims, regardless of their merit, could be time consuming to address, result in costly litigation, divert the efforts of our technical and management personnel, cause product release or shipment delays and/or damage to our customer relationships, any of which could have an adverse effect on our results of operations and cash flows.”²⁵ However, these disclosures were general disclosures that were similarly provided in Qualcomm’s SEC filings before and after the Breach Letter, including disclosure after the Breach Letter had been withdrawn. Qualcomm did not disclose the nature of the material adverse effects, such as the effect on its business or customer relationships resulting from the Breach Letter or its publication in the Bloomberg Article that Qualcomm alleges it suffered in the Second Amended Complaint. This information was not disclosed in the 2024 Form 10-K or at any time after it was filed on November 6, 2024, including in its Q4 2024 Conference Call on November 6, 2024;²⁶ Investor Day 2024: IoT and Automotive Diversification Update on November 19, 2024;²⁷ UBS Global Technology and AI Conference on December 4, 2024,²⁸ or Q1 2025 Form 10-Q filed on February 5, 2025,²⁹ and its related earnings call. Based on my experience, I would have expected this information to have been disclosed if the material adverse impact was as alleged.

III. Relevant Factual and Regulatory Background

A. Background to the Parties

23. Qualcomm is a Delaware corporation with its principal place of business in California. Qualcomm is a Nasdaq stock market registrant and files periodic and other reporting pursuant to Section 13 of the Securities Exchange Act of 1934 (“Exchange Act”).³⁰ In its 2024 Form 10-K, Qualcomm describes itself as “a global technology leader, helping to bring intelligent computing everywhere through the development and commercialization of foundational technologies.... We innovate and collaborate across

²² Qualcomm Inc., Form 10-K for fiscal year ended September 29, 2024, p. F-24.

²³ Qualcomm Inc., Form 10-K, for the fiscal year ended September 29, 2024, pp. 29, 30, 31, 32, 33, 34.

²⁴ Qualcomm Inc., Form 10-K, for fiscal year ended September 29, 2024, p. 29.

²⁵ Qualcomm Inc., Form 10-K, for the fiscal year ended September 29, 2024, p. 34.

²⁶ Qualcomm Q4 2024 Earnings Call Transcript, November 06, 2024.

²⁷ Qualcomm Investor Day 2024 Transcript, November 19, 2024.

²⁸ Qualcomm UBS Global Tech Conference Transcript, December 04, 2024.

²⁹ Qualcomm Inc., Form 10-Q, for the quarterly period ended December 29, 2024.

³⁰ Qualcomm Inc., Form 10-K, for the fiscal year ended September 29, 2024, p. 1.

HIGHLY CONFIDENTIAL – ATTORNEYS’ EYES ONLY

many ecosystems, including with manufacturers, operators, developers, system integrators, cloud providers, test tool vendors, service providers, governments and industry standards organizations, to enable next-generation digital transformation.”³¹

24. Arm is a corporation organized under the laws of the United Kingdom and has its principal place of business in Cambridge, United Kingdom.³² Arm is a Nasdaq stock market registrant and files periodic and other reporting as a foreign private issuer, pursuant to Section 13 of the Exchange Act.³³ In Arm’s annual report for the year ending March 31, 2024, it describes itself as “the industry leader in the design of CPUs for semiconductor chips. The CPU is the brain chip, and we architect, develop, and license high-performance, low-cost, and energy-efficient CPU products and related technology, on which many of the world’s leading semiconductor companies and OEMs rely to develop their products.”³⁴
25. The current operative QC ALA was entered into on May 30, 2013³⁵ and licensed Qualcomm to develop and sell custom-designed CPUs that are compatible with Arm’s Instruction Set Architecture (“ISA”).³⁶
26. On March 15, 2021, Qualcomm issued a press note that it had completed the acquisition of Nuvia Inc. (“Nuvia”),³⁷ which it had previously disclosed via Form 8-K with the SEC on January 12, 2021.³⁸ The press note described Nuvia as a “world-class CPU and technology design company.”³⁹ At the time of the acquisition, Nuvia held an architecture license agreement with Arm (“the Nuvia ALA”).⁴⁰

B. Breach Letter

27. On October 22, 2024, Arm served Qualcomm the Breach Letter.⁴¹ The first paragraph of the Breach Letter stated:

[REDACTED]

[REDACTED]

³¹ Qualcomm Inc., Form 10-K, for the fiscal year ended September 29, 2024, p. 6.

³² Arm Holdings PLC, Form 20-F, for the year ended March 31, 2025, p. 1.

³³ Arm Holdings PLC, Form 20-F, for the year ended March 31, 2025, p. 2.

³⁴ Arm Holdings PLC Financial Statements for year ended as of March 31, 2024, p. 1.

³⁵ Second Amended Complaint, *Qualcomm Inc. And Qualcomm Technologies Inc. v. Arm Holdings PLC*, June 03, 2025, p. 21.

³⁶ Second Amended Complaint, *Qualcomm Inc. And Qualcomm Technologies Inc. v. Arm Holdings PLC*, June 03, 2025, pp. 3-4.

³⁷ Qualcomm Press Announcement, March 15, 2021.

<https://www.qualcomm.com/news/releases/2021/03/qualcomm-completes-acquisition-nuvia>

³⁸ Qualcomm Inc., Form 8-K, January 12, 2021.

³⁹ Qualcomm Press Announcement, March 15, 2021.

<https://www.qualcomm.com/news/releases/2021/03/qualcomm-completes-acquisition-nuvia>.

⁴⁰ Complaint, *Arm LTD v. Qualcomm Inc., et.al*, August 31, 2022, pp. 5-7.

⁴¹ The Breach Letter, October 22, 2024.

HIGHLY CONFIDENTIAL – ATTORNEYS’ EYES ONLY

- [REDACTED]
- [REDACTED]⁴²
28. [REDACTED]
- [REDACTED]
- [REDACTED]⁴³
29. The Bloomberg Article stated that Arm had given Qualcomm “a mandated 60-day notice of the cancellation of their so-called architectural license agreement, according to a document seen by Bloomberg. The contract allows Qualcomm to create its own chips based on standards owned by Arm.”⁴⁴
30. On January 8, 2025, Arm notified Qualcomm that it was withdrawing its notice of breach as per the Breach Letter.⁴⁵

C. Background to the Dispute

31. On August 31, 2022, Arm filed a complaint against Qualcomm in the United States District Court for the District of Delaware (“the Arm Complaint”).⁴⁶ Arm alleged that Qualcomm and Nuvia breached the terms of the Nuvia ALA by failing to comply with the termination provisions of that agreement.⁴⁷
32. On September 30, 2022, Qualcomm filed its answer to the Arm Complaint and its counterclaim.⁴⁸ Qualcomm subsequently filed two amended counterclaims on October 26, 2022, and March 22, 2024, seeking declaratory relief and damages.⁴⁹ On November 15, 2022, Arm answered Qualcomm and Nuvia’s amended counterclaims, asserting that, among other things, Qualcomm breached the QC ALA.⁵⁰
33. On April 18, 2024, Qualcomm filed a separate complaint against Arm in the United States District Court for the District of Delaware alleging that Arm had breached the QC ALA.⁵¹ Qualcomm amended the

⁴² The Breach Letter, October 22, 2024.

⁴³ The Breach Letter, October 22, 2024.

⁴⁴ Bloomberg, ARM to scrap Qualcomm Chip Design License in Feud Escalation, October 22, 2024.

⁴⁵ Qualcomm Inc., Form 10-Q, for the quarter ended December 29, 2024, p. 13.

⁴⁶ Complaint, Arm LTD v. Qualcomm Inc., et.al, August 31, 2022, p. 1.

⁴⁷ Qualcomm Inc., Form 10-K, for the fiscal year ended September 29, 2024, p. F-23.

⁴⁸ Qualcomm Inc., Form 10-K, for the fiscal year ended September 29, 2024, p. F-24.

⁴⁹ Qualcomm Inc., Form 10-K, for the fiscal year ended September 29, 2024, p. F-24.

⁵⁰ *Arm Ltd. v. Qualcomm Inc. et al.*, No. 22-1146 (MN), Plaintiff Arm Ltd.’s Answer and Affirmative Defenses to Defendants Qualcomm Inc., Qualcomm Technologies, Inc., and Nuvia, Inc.’s Amended Counterclaim, D.I. 21 at 2 (“Qualcomm is not only trying to develop an unlicensed product, but is also materially breaching its ALA with Arm.”); 37 (“Qualcomm is materially breaching its ALA, giving Arm the right to terminate”); 39 (“Arm is entitled to terminate Qualcomm’s ALA based on Qualcomm’s material breaches”); 42 (claiming that Qualcomm “materially breach[ed] the [Qualcomm ALA’s] terms and implied covenant of good faith and fair dealing . . . entitling Arm to terminate the Qualcomm ALA under Section 14.2”).

⁵¹ Qualcomm Inc., Form 10-K, for the fiscal year ended September 29, 2024, p. F-24.

HIGHLY CONFIDENTIAL – ATTORNEYS’ EYES ONLY

April 2024 complaint for a second time on June 3, 2025⁵²; this Second Amended Complaint alleges, amongst other things:

- a. “Arm’s Breach Letter was the latest installment of Arm’s longstanding efforts to undermine Qualcomm’s market position and to interfere with Qualcomm’s relationships with current and prospective customers.”⁵³
- b. “More recently, Arm began ‘ratcheting up the pressure’ on Qualcomm in *Arm v. Qualcomm*, and Arm continued this misinformation campaign by declaring without basis that Qualcomm has materially breached the QC ALA and leaking the Breach Letter. By doing so, Arm has caused tangible harm to Qualcomm’s customer relationships.”⁵⁴
- c. “[S]everal Qualcomm customers have deferred finalizing pending business agreements pending resolution of the *Arm v. Qualcomm* litigation and until Qualcomm provides them with reassurances that it will be able to provide licensed Arm-compliant products.”⁵⁵
- d. “[A] major customer (the ‘Smartphone Company’) ... [a]fter learning that Arm was threatening to terminate the QC ALA... informed a senior Qualcomm executive that the customer’s legal and intellectual-property teams would need to confer with their counterparts at Qualcomm. The Smartphone Company has also insisted on Qualcomm’s providing additional reassurances before it will extend its existing business relationship with Qualcomm.”⁵⁶
- e. “[A] potential customer (the ‘AI and Ecosystem Company’) that currently relies on a competitor’s chips for its substantial processing needs was in the process of reaching an agreement with Qualcomm...[a]fter the Breach Letter was published... stated to Qualcomm that before it finalizes that termsheet, it must first understand the implications of termination of the QC ALA on Qualcomm’s ability to deliver the custom chips in question. As a result of the uncertainty stemming from Arm’s assertion and leak of the

⁵² Second Amended Complaint, *Qualcomm Inc. And Qualcomm Technologies Inc. v. Arm Holdings PLC*, June 03, 2025, p. 1.

⁵³ Second Amended Complaint, *Qualcomm Inc. And Qualcomm Technologies Inc. v. Arm Holdings PLC*, June 03, 2025, p. 12.

⁵⁴ Second Amended Complaint, *Qualcomm Inc. And Qualcomm Technologies Inc. v. Arm Holdings PLC*, June 03, 2025, p. 42.

⁵⁵ Second Amended Complaint, *Qualcomm Inc. And Qualcomm Technologies Inc. v. Arm Holdings PLC*, June 03, 2025, p. 49.

⁵⁶ Second Amended Complaint, *Qualcomm Inc. And Qualcomm Technologies Inc. v. Arm Holdings PLC*, June 03, 2025, p. 49.

HIGHLY CONFIDENTIAL – ATTORNEYS’ EYES ONLY

Breach Letter, there was a delay in Qualcomm’s ability to finalize this valuable opportunity.”⁵⁷

34. Count IV of the Second Amended Complaint, Intentional Interference with Prospective Economic Advantage, summarizes the above:

- a. “Qualcomm has economic relationships with customers that rely on Qualcomm’s technology to meet their business needs, including the Smartphone Company and the AI and Ecosystem Company referenced above.”⁵⁸
- b. “Absent Arm’s interference, these relationships would likely result or would have likely resulted in profitable business opportunities for Qualcomm, most notably for Qualcomm to sell its customers particular SoCs to support those customers’ business operations. These relationships are sufficient to support an intentional-interference claim because the Smartphone Company is already a major Qualcomm customer, while the AI and Ecosystem Company operates a large number of datacenters, is a large buyer of datacenter hardware, and had reached a nearly final termsheet with Qualcomm before Arm’s interference sabotaged that business relationship.”⁵⁹
- c. “As a result of these delays and interruptions in its business relationships, Qualcomm has suffered actual harm.”⁶⁰

35. Further, in Count VI of the Second Amended Complaint, Violations of the California Unfair Competition Law (“UCL”), Qualcomm alleges that:

- a. “Arm has committed and continues to commit unlawful and unfair business acts or practices prohibited by the UCL. These unfair business acts or practices include . . . repeatedly interfering or attempting to interfere with Qualcomm’s relationships with Qualcomm’s customers and prospective customer; wrongfully asserting that it has the right to terminate the QC ALA without any basis in the QC ALA for those assertions, and then leaking the Breach Letter to the media, in an effort to terminate the QC ALA and

⁵⁷ Second Amended Complaint, *Qualcomm Inc. And Qualcomm Technologies Inc. v. Arm Holdings PLC*, June 03, 2025, p. 49-50.

⁵⁸ Second Amended Complaint, *Qualcomm Inc. And Qualcomm Technologies Inc. v. Arm Holdings PLC*, June 03, 2025, p. 57.

⁵⁹ Second Amended Complaint, *Qualcomm Inc. And Qualcomm Technologies Inc. v. Arm Holdings PLC*, June 03, 2025, p. 57.

⁶⁰ Second Amended Complaint, *Qualcomm Inc. And Qualcomm Technologies Inc. v. Arm Holdings PLC*, June 03, 2025, p. 58.

HIGHLY CONFIDENTIAL – ATTORNEYS’ EYES ONLY

thereby obstruct Qualcomm’s ability to produce custom cores and thus eliminate a competing supplier of chips compatible with the Arm ISA[.]”⁶¹

- b. “Arm’s actions are part of a broader campaign to harm or threaten to harm competition” by “employing a variety of unfair acts and practices” “includ[ing]” making misleading statements to Qualcomm’s customers to pressure them not to acquire products from Qualcomm and threatening or attempting to cut off Qualcomm’s access to the ubiquitous Arm ISA with the goal of preventing Qualcomm from developing custom cores that would compete with Arm’s own designs and from marketing products that contain Qualcomm custom cores.”⁶²
- c. “it has suffered or faces the threat of loss of profits, customers, and potential customers,” and has “standing to bring this UCL claim because it has lost money or property as a result of Arm’s unfair competition, including by losing business opportunities that would have been awarded to it absent Arm’s conduct.”⁶³

D. Public Company Disclosure Obligations

a) Definition of Materiality in Public Company Disclosure Obligations

- 36. This report highlights regulatory requirements for public companies to disclose occurrences classified as “material” under SEC guidelines. The SEC has issued the following guidance on the concept of materiality and disclosure:
 - a. SEC Staff Accounting Bulletin No. 99, Materiality states a matter is material “if there is a substantial likelihood that a reasonable person would consider it important.”⁶⁴
 - b. The SEC’s Acting Chief Accountant has referenced the Supreme Court precedent which held that a fact is material if there is, “a substantial likelihood that the ... fact would have been viewed by the reasonable investor as having significantly altered the total mix of information made available.”⁶⁵

⁶¹ Second Amended Complaint, *Qualcomm Inc. And Qualcomm Technologies Inc. v. Arm Holdings PLC*, June 03, 2025, p. 59.

⁶² Second Amended Complaint, *Qualcomm Inc. And Qualcomm Technologies Inc. v. Arm Holdings PLC*, June 03, 2025, p. 60.

⁶³ Second Amended Complaint, *Qualcomm Inc. And Qualcomm Technologies Inc. v. Arm Holdings PLC*, June 03, 2025, p. 61.

⁶⁴ SEC Staff Accounting Bulletin: No 99 – Materiality.

⁶⁵ SEC Statement, Assessing Materiality: Focusing on the Reasonable Investor When Evaluating Errors.

HIGHLY CONFIDENTIAL – ATTORNEYS’ EYES ONLY

- c. The Director of Corporate Finance stated “materiality is not an easily applied litmus test. If there any gray areas — and as disclosure lawyers I would suspect that you more frequently see shades of gray, rather than black and white — the company is likely to include the disclosure in its filing. And why wouldn’t you? Why would you take the risk of omitting disclosure that might be material?”⁶⁶

b) Form 10-K

37. Domestic, publicly traded companies are required by law to disclose annual reports which include audited financial statements on Form 10-K.⁶⁷ Form 10-K offers a detailed picture of a company’s business, the risks it faces, and the operating and financial results for the fiscal year.⁶⁸ Companies are prohibited from omitting material information that is needed to make the disclosure not misleading.⁶⁹ Company management also discusses its perspective on the business results and what is driving them.⁷⁰ Large, accelerated filers must file a Form 10-K within 60 days from the end of the fiscal year.⁷¹ The following sections of Form 10-K are relevant to this report:

(1) Item 1A. Risk Factors

38. Item 1A requires companies to discuss material factors that make an investment in the registrant or offering speculative or risky under the caption of “Risk Factors.”⁷² Companies should explain how each risk affects the registrant or the securities being offered.⁷³ Risk Factors include information about the most significant risks that apply to the company.⁷⁴ Risk Factors should not be “boilerplate” but should be concise and focused disclosure explaining how each risk affects the company is most useful for investors.⁷⁵

⁶⁶ SEC Speech, Disclosure Effectiveness: Remarks Before the American Bar Association Business Law Section Spring Meeting, April 11, 2014.

⁶⁷ SEC Introduction to Investing Glossary, Form 10-K.

⁶⁸ SEC Introduction to Investing Glossary, Form 10-K.

⁶⁹ SEC Investor Bulletin, How to Read a 10-K, January 25, 2021.

⁷⁰ SEC Investor Bulletin, How to Read a 10-K, January 25, 2021.

⁷¹ SEC Glossary, Form 10-K.

⁷² 17 CFR § 229.105 (a) (Item 105) Risk factors, Regulation S-K.

⁷³ 17 CFR § 229.105 (a) (Item 105) Risk factors, Regulation S-K.

⁷⁴ SEC Investor Bulletin, How to Read a 10-K, January 25, 2021, at 1.

⁷⁵ SEC Speech, Applying a Principles-Based Approach to Disclosing Complex, Uncertain and Evolving Risks, March 15, 2019.

HIGHLY CONFIDENTIAL – ATTORNEYS’ EYES ONLY

(2) Item 3. Legal Proceedings

39. Item 3 requires companies to describe significant⁷⁶ pending lawsuits or other legal proceedings, other than ordinary routine litigation incidental to the business.⁷⁷ Information can be cross-referenced to legal proceedings disclosure elsewhere in the document.⁷⁸

(3) Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations.

40. The management’s discussion and analysis of financial condition and results of operations (“MDA”) provides the company’s perspective on the business results of the past fiscal year⁷⁹ and “any known trends or uncertainties that could materially affect the company’s results.”⁸⁰
41. The MDA must “focus specifically on material events and uncertainties known to management that are reasonably likely to cause reported financial information not to be necessarily indicative of future operating results or of future financial condition.”⁸¹ This includes descriptions and amounts of matters that are reasonably likely based on management's assessment to have a material impact on future operations.⁸² The SEC indicates that “reasonably likely” is a lower threshold than “more likely than not” but a higher threshold than “remote.”⁸³ Companies are required to consider whether an event or uncertainty is likely to come to fruition when applying the “reasonably likely” threshold.⁸⁴
42. A disclosure duty exists where an event or uncertainty is both presently known to management and reasonably likely to have material effects on the registrant's financial condition or results of operation.⁸⁵ Further, if management is unable to determine whether an event or uncertainty will come to fruition, but it

⁷⁶ SEC Investor Bulletin, How to Read a 10-K January 25, 2021.

⁷⁷ 17 CFR § 229.103 (a) (Item 103) Legal proceedings, Regulation S-K.

⁷⁸ 17 CFR § 229.103 (a) (Item 103) Legal proceedings, Regulation S-K.

⁷⁹ SEC Investor Bulletin, How to Read a 10-K, January 25, 2021, at 2.

⁸⁰ SEC Investor Bulletin, How to Read a 10-K, January 25, 2021, at 3.

⁸¹ SEC Final Rule, Management’s Discussion and Analysis, Selected Financial Data, and Supplementary Financial Information, p. 182.

⁸² SEC Final Rule, Management’s Discussion and Analysis, Selected Financial Data, and Supplementary Financial Information, p. 163.

⁸³ SEC Financial Reporting Manual, Topic 9, Management's Discussion and Analysis of Financial Position and Results of Operations (MD&A), 9200 General Requirements, 9220.11.

⁸⁴ SEC Final Rule, Management’s Discussion and Analysis, Selected Financial Data, and Supplementary Financial Information, p. 47.

⁸⁵ SEC Interpretive Rule, Management’s Discussion and Analysis of Financial Condition and Results of Operations; Certain Investment Company Disclosures, p. 5.

HIGHLY CONFIDENTIAL – ATTORNEYS’ EYES ONLY

could significantly impact the company's future results or financial condition, they should disclose it if not doing so would mislead a reasonable investor about the available information.⁸⁶

43. This analysis should be made objectively and with a view to providing investors with a clearer understanding of the potential material consequences of such known forward-looking events or uncertainties.⁸⁷

(4) Item 8. Financial Statements and Supplementary Data

44. Companies must include audited financial statements in line with US GAAP within the Item 8 section of Form 10-K.⁸⁸ This includes the company’s income statement, balance sheets, statement of cash flows and statement of stockholders’ equity.⁸⁹ The financial statements are accompanied by notes that explain the information presented in the financial statements.⁹⁰

i. Contingent Liabilities

45. Companies are required to make a disclosure on loss contingencies which are defined as “an existing condition, situation, or set of circumstances involving uncertainty as to possible loss to an entity that will ultimately be resolved when one or more future events occur or fail to occur.”⁹¹ Pending or threatened litigation is an example of a loss contingency.⁹²
46. An estimated loss resulting from a loss contingency should be accrued by a charge to income if information available before the financial statements are issued or are available to be issued indicates that it is probable that an asset has been impaired or a liability has been incurred at the date of the financial statements and the amount of the loss can be reasonably estimated.⁹³ “Probable” means the future event or events are likely to occur.⁹⁴
47. For loss contingencies that are not recorded in the financial statements, a disclosure of the contingency is still required if there is at least a reasonable possibility that a loss or an additional loss may have been incurred, and: a) where an accrual is not made for a loss contingency because the amount cannot be

⁸⁶ SEC Final Rule, Management’s Discussion and Analysis, Selected Financial Data, and Supplementary Financial Information, pp. 47.

⁸⁷ SEC Final Rule, Management’s Discussion and Analysis, Selected Financial Data, and Supplementary Financial Information, p. 47.

⁸⁸ SEC Investor Bulletin, How to Read a 10-K, January 25, 2021.

⁸⁹ SEC Investor Bulletin, How to Read a 10-K, January 25, 2021.

⁹⁰ SEC Investor Bulletin, How to Read a 10-K, January 25, 2021.

⁹¹ FASB ASC. 450-20, Loss Contingencies, Glossary.

⁹² FASB ASC. 450-20-05-10, Loss Contingencies, Type of Loss Contingencies.

⁹³ FASB AC. 450-20-25-2, Loss Contingencies, General Note.

⁹⁴ FASB ASC. 450-20, Loss Contingencies, Glossary.

HIGHLY CONFIDENTIAL – ATTORNEYS’ EYES ONLY

reasonably estimated or the loss is not probable, or b) an exposure to loss exists in excess of an amount already accrued.⁹⁵ “Reasonably possible” means that the chance of the future event or events occurring is more than remote but less than likely.⁹⁶ The disclosures are usually made in the notes to the financial statements but in some cases, disclosure may relate to disclosure on the face of the financial statements.⁹⁷ The disclosure should include the nature of the contingency and an estimate of the possible loss or range of loss or a statement that such an estimate cannot be made.⁹⁸

ii. Subsequent Events

48. Subsequent events are events or transactions that occur after the balance sheet date but before the financial statements are issued or available to be issued.⁹⁹ They can either 1) consists of events or transactions that provide additional evidence about conditions that existed at the date of the balance sheet, or 2) consists of events or transactions that provide evidence about conditions that did not exist at the date of the balance sheet but arose subsequent to that date.¹⁰⁰
49. The financial statements submitted in Form 10-K must not be misleading as of the date they are filed with the Commission.¹⁰¹ Some subsequent events that did not exist at the date of the balance sheet may be of such a nature that they must be disclosed to keep the financial statements from being misleading.¹⁰² For such events, an entity shall disclose the nature of the event and an estimate of its financial effect, or a statement that such an estimate cannot be made.¹⁰³

(5) Item 9A. Disclosure Controls & Procedures

50. Companies are required to assess and disclose their evaluation of the effectiveness of the company's disclosure controls and procedures. This assessment is typically made as of the end of each quarter.¹⁰⁴ A registered external auditor must attest to the management assertion that internal accounting controls are in place, operational and effective.¹⁰⁵

⁹⁵ FASB ASC. 450-20-50-5, Loss Contingencies, Unrecognized Contingencies.

⁹⁶ FASB ASC. 450-20, Loss Contingencies, Glossary.

⁹⁷ FASB ASC. 450-20-50, Loss Contingencies, General Note.

⁹⁸ FASB ASC. 450-20-50-4, Loss Contingencies, Unrecognized Contingencies.

⁹⁹ FASB ASC. 855-10-20, Subsequent Events, Glossary.

¹⁰⁰ FASB ASC. 855-10-20, Subsequent Events, Glossary.

¹⁰¹ FASB ASC. 855-10-S99-2, Subsequent Events, General, SEC Staff Guidance.

¹⁰² FASB ASC. 855-10-50-2, Subsequent Events, Nonrecognized Subsequent Events.

¹⁰³ FASB ASC. 855-10-50-2, Subsequent Events, Nonrecognized Subsequent Events.

¹⁰⁴ 17 CFR § 240.13a-15 (b)- Controls and procedures.

¹⁰⁵ Sarbanes-Oxley Act of 2002, § 404(b).

HIGHLY CONFIDENTIAL – ATTORNEYS' EYES ONLY

51. Disclosure controls and procedures are defined as controls and other procedures designed to ensure that information required to be disclosed by the company in its reports is recorded, processed, summarized, and reported within the time periods specified in the SEC's rules and forms.¹⁰⁶ Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by an issuer in the reports that it files or submits under the Act is accumulated and communicated to the issuer's management, including its principal executive and principal financial officers, or persons performing similar functions, as appropriate to allow timely decisions regarding required disclosure.¹⁰⁷
52. Companies must disclose management assessment of the company's internal control over financial reporting in management's annual report.¹⁰⁸ This report should include a statement of management's responsibility for establishing and maintaining adequate internal control over financial reporting; an assessment of the effectiveness of the company's internal control over financial reporting as of the end of the most recent fiscal year; and a statement identifying the framework used by management to evaluate the effectiveness of the internal control over financial reporting.¹⁰⁹ Companies must disclose any change in their internal control over financial reporting that occurred during the last fiscal quarter that has materially affected, or is reasonably likely to materially affect, the company's internal control over financial reporting.¹¹⁰
53. Qualcomm filed its Form 10-K for the fiscal year ending September 29, 2024 on November 6, 2024.¹¹¹

c) Form 10-Q

54. Domestic, publicly traded companies are required by law to file quarterly reports on Form 10-Q.¹¹² The Form 10-Q includes unaudited interim financial statements and provides a continuing view of the company's financial position during the year. The report must be filed for each of the first three fiscal quarters of the company's fiscal year.¹¹³

¹⁰⁶ 17 CFR § 240.13a-15 (e)- Controls and procedures.

¹⁰⁷ 17 CFR § 240.13a-15 (e)- Controls and procedures.

¹⁰⁸ 17 CFR § 229.308 (a) - (Item 308) Internal control over financial reporting.

¹⁰⁹ 17 CFR § 229.308 (a) - (Item 308) Internal control over financial reporting.

¹¹⁰ 17 CFR § 229.308 (c) - (Item 308) Internal control over financial reporting.

¹¹¹ Qualcomm Inc., Form 10-K, for the fiscal year ended September 29, 2024, p. 1.

¹¹² SEC Introduction to Investing Glossary, Form 10-Q.

¹¹³ SEC Introduction to Investing Glossary Form 10-Q.

HIGHLY CONFIDENTIAL – ATTORNEYS’ EYES ONLY

55. Under a Form 10-Q companies must disclose information under topics such as legal proceedings, risk factors, MDA, and disclosure controls and procedures as per the requirements discussed above for Form 10-K.¹¹⁴
56. Unlike Form 10-K, the financial statements and management’s disclosure of controls and procedures under Form 10-Q are not required to be audited by independent auditors.^{115 116} Under Form 10-Q, the signing officers for these periodic reports are required to have evaluated the effectiveness of internal controls and indicate whether or not there were significant changes in internal controls or in other factors that could significantly affect internal controls subsequent to the date of their evaluation, including any corrective actions with regard to significant deficiencies and material weaknesses.¹¹⁷
57. Within Form 10-Q, a company must disclose any material changes in risk factors previously disclosed within its Form 10-K filing for Item 1A Risk Factors.¹¹⁸ Further, if there are any material changes in financial condition and results of operations, as well as any changes in performance trends or uncertainties that could materially affect the company from the end of the preceding fiscal year to the date of the quarterly report, they must be disclosed in the Management Discussion and Analysis section in Item 2.¹¹⁹ With respect to legal proceedings, the matters that must be reported in the 10-Q are matters that first became a reportable event in the quarter or if there have been material developments in a matter.¹²⁰ Subsequent Form 10-Q filings in which a legal proceeding or a material development is reported should reference any previous reports from that year that discuss the same legal proceeding.¹²¹
58. Qualcomm filed its first Form 10-Q following receipt of the Breach Letter on February 5, 2025 in relation to its first quarter of the 2025 fiscal year.¹²²

E. Investor Events

59. Investor events and investor calls (also known as earnings calls or conference calls) allow “publicly traded companies to discuss their performance with investors and analysts”¹²³. These are “usually

¹¹⁴ SEC General Instructions, Form 10-Q.

¹¹⁵ Sarbanes-Oxley Act of 2002, § 404(a)(b).

¹¹⁶ SEC Financial Reporting Manual, Topic 1 Registrant’s Financial Statements, 1110.1 and 1120.

¹¹⁷ Sarbanes-Oxley Act of 2002, § 302 4(a-d), 6.

¹¹⁸ SEC General Instructions, Form 10-Q.

¹¹⁹ SEC Final Rule, Management’s Discussion and Analysis, Selected Financial Data, and Supplementary Financial Information, pp. 169-170.

¹²⁰ SEC General Instructions, Form 10-Q.

¹²¹ SEC General Instructions, Form 10-Q.

¹²² Qualcomm Inc., Form 10-Q, for the quarterly period ended December 29, 2024, p. 1.

¹²³ NASDAQ, What Is an Earnings Call? Here’s What New Investors Should Know, April 27, 2024.

HIGHLY CONFIDENTIAL – ATTORNEYS’ EYES ONLY

conducted by the chief executive officer (“CEO”) and chief financial officer (“CFO”).”¹²⁴ and other executives.¹²⁵ Investor’s often “use information from earnings calls to make more informed investment decisions”.¹²⁶ Companies usually conduct investor calls “immediately following the release of financial results, typically at the end of each quarter. These are known as quarterly earnings results conference calls.”¹²⁷

60. Companies must comply with the SEC’s Regulation Fair Disclosure (“Regulation FD”) which requires that companies make public rather than selective disclosure of any material nonpublic information.¹²⁸ Regulation FD applies to communications where it is reasonably foreseeable that the security holder will trade on the basis of the information.¹²⁹ In its guidance on Regulation FD, one of the SEC’s suggestions for making a planned disclosure of material information includes holding a conference call in an open manner, permitting investors to listen in either by telephonic means or through internet webcasting.¹³⁰ The SEC notes that some types of information or events that should be reviewed carefully to determine whether they are material: (1) earnings information; (2) mergers, acquisitions, tender offers, joint ventures, or changes in assets; (3) new products or discoveries, or developments regarding customers or suppliers (e.g., the acquisition or loss of a contract); (4) changes in control or in management; (5) change in auditors or auditor notification that the issuer may no longer rely on an auditor’s audit report; (6) events regarding the issuer’s securities; and (7) bankruptcies or receiverships.¹³¹ These events must be assessed for their materiality to inform what is required to be disclosed.¹³²
61. Qualcomm participated in three investor events in the period following receipt of the Breach Letter¹³³: Q4 2024 Earnings Conference Call on November 6, 2024¹³⁴; Investor Day 2024: IoT and Automotive Diversification Update on November 19, 2024;¹³⁵ and UBS Global Technology and AI Conference on December 4, 2024.¹³⁶

¹²⁴ NASDAQ, What Is an Earnings Call? Here’s What New Investors Should Know, April 27, 2024.

¹²⁵ NASDAQ, What Is an Earnings Call? Here’s What New Investors Should Know, April 27, 2024.

¹²⁶ NASDAQ, What Is an Earnings Call? Here’s What New Investors Should Know, April 27, 2024.

¹²⁷ Investopedia, Earnings Conference Call: What it is, How it Works, September 11, 2022.

¹²⁸ 17 CFR Part 243.100(a), Regulation Fair Disclosure.

¹²⁹ 17 CFR Part 243.100(b)(iv), Regulation Fair Disclosure.

¹³⁰ SEC Final Rule: Selective Disclosure and Insider Trading, p. 17.

¹³¹ SEC Final Rule: Selective Disclosure and Insider Trading, p. 9.

¹³² SEC Final Rule: Selective Disclosure and Insider Trading, p. 9.

¹³³ Qualcomm Press Announcement, December 20, 2024.

<https://www.qualcomm.com/news/releases/2024/12/qualcomm-statement-on-trial-verdict-win#:~:text=We%20are%20pleased%20with%20today's,by%20Qualcomm's%20contract%20with%20ARM.>

¹³⁴ Qualcomm Q4 2024 Earnings Call Transcript, November 06, 2024.

¹³⁵ Qualcomm Investor Day 2024 Transcript, November 19, 2024.

¹³⁶ Qualcomm UBS Global Tech Conference Transcript, December 04, 2024.

HIGHLY CONFIDENTIAL – ATTORNEYS’ EYES ONLY

IV. Basis for Opinions and Analysis

62. The Kennedy Report opines that Qualcomm suffered damage due to the Breach Letter and its alleged leak among other allegations posed by Qualcomm.¹³⁷ He states:

a. “Qualcomm alleges that the Notice Letter was leaked to the media by Arm as an attempt to interfere with Qualcomm’s current and potential business relationships”¹³⁸

b. “Qualcomm alleges that, as a result of the Notice Letter, as well as the prior communications discussed above, its business with certain customers, including [REDACTED], has been impacted.”¹³⁹

c. “I understand that Qualcomm alleges that due to Arm’s leak of the Notice Letter, [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED] I have been asked by Qualcomm’s counsel to analyze the economic and financial impact to Qualcomm regarding [REDACTED] prior to Arm’s leak of the Notice Letter versus the most recent version of [REDACTED] [REDACTED] after the leak of the Notice Letter.”¹⁴⁰

63. The Posner Report opines that “Arm’s ability to degrade firms’ access to the Arm ISA has been demonstrated by Arm’s actions against Qualcomm,” including “leaking the [Breach Letter]” to “undermine customers’ confidence in Qualcomm.”¹⁴¹

A. Qualcomm was required to disclose the Breach Letter within its 2024 Form 10-K regardless of the publication of its contents in the Bloomberg Article.

64. A Form 10-K is a mandatory annual disclosure for publicly traded domestic companies.¹⁴² It offers “ a detailed picture of a company’s business, the risks it faces, and the operating and financial results for the fiscal year.”¹⁴³ In addition to the information expressly required to be included in a Form 10-K, further

¹³⁷ Expert Report of Mr. Kennedy, paragraph 68,80, Figure 27.

¹³⁸ Expert Report of Mr. Kennedy, paragraph 118.

¹³⁹ Expert Report of Mr. Kennedy, paragraph 124.

¹⁴⁰ Expert Report of Mr. Kennedy, paragraph 125.

¹⁴¹ Expert Report of Mr. Posner, paragraph 65.

¹⁴² SEC Investor Bulletin, How to Read a 10-K, January 25, 2021.

¹⁴³ SEC Investor Bulletin, How to Read a 10-K, January 25, 2021.

HIGHLY CONFIDENTIAL – ATTORNEYS’ EYES ONLY

“material” information (as defined above) should be added to ensure the disclosures are “not misleading.”

¹⁴⁴ Included within this “material” information are Loss Contingencies, the disclosures for which are governed by Accounting Standards Codification 450-20 (“ASC 450-20”). Companies are required to make a disclosure on contingent losses which are defined as “an existing condition, situation, or set of circumstances involving uncertainty as to possible loss to an entity that will ultimately be resolved when one or more future events occur or fail to occur.”¹⁴⁵

65. How a loss contingency is disclosed depends on the probability of the loss occurring and whether the loss can be measured. ASC 450-20 categorizes levels of probability as 1) **remote** - the chance of the future event or events occurring is slight, 2) **reasonably possible** - the chance of the future event or events occurring is more than remote but less than likely, and 3) **probable** - the future event or events are likely to occur.¹⁴⁶ The loss can be measured if the amount of loss can be reasonably estimated.¹⁴⁷ Disclosure of the contingency is made if there is “at least a reasonable possibility” that a loss or an additional loss “may have been incurred” and an accrual in the financial statement is not made.¹⁴⁸
66. Disclosure of a loss contingency arising after the date of an entity's financial statements but before those financial statements are issued, may be necessary to keep the financial statements from being misleading if an accrual is not required.¹⁴⁹ If disclosure is deemed necessary, the financial statements shall include the nature of the loss or loss contingency and an estimate of the amount or range of loss or possible loss or a statement that such an estimate cannot be made.¹⁵⁰
67. Deposition testimony shows Qualcomm perceived the Breach Letter was a “material business event” and the relevant content states that “[u]nless Qualcomm cures its material breach within 60 days, Arm shall be entitled to immediately terminate the ALA.”¹⁵¹ The loss contingency related to the Breach Letter was required to be disclosed as the deposition testimony shows Qualcomm perceived that it was reasonably possible that a loss may have been incurred if Qualcomm did not cure the alleged material breach within 60 days. [REDACTED]
- [REDACTED]
- [REDACTED]

¹⁴⁴ SEC Form 10-K, General Instructions, p. 2.

¹⁴⁵ FASB ASC. 450-20, Loss Contingencies, Glossary.

¹⁴⁶ FASB ASC. 450-20, Loss Contingencies, Glossary.

¹⁴⁷ FASB ASC. 450-20-25-2b, Loss Contingencies, Recognition.

¹⁴⁸ FASB ASC. 450-20-50-3, Loss Contingencies, Disclosure, Unrecognized Contingencies.

¹⁴⁹ FASB ASC. 450-20-50-9, Loss Contingencies, Losses Arising After the Date of the Financial Statements.

¹⁵⁰ FASB ASC. 450-20-50-9, Loss Contingencies, Losses Arising After the Date of the Financial Statements.

¹⁵¹ The Breach Letter, October 22, 2024.

¹⁵² [REDACTED].

HIGHLY CONFIDENTIAL – ATTORNEYS’ EYES ONLY

[REDACTED]
[REDACTED]
[REDACTED]¹⁵³

68. Based on my review of the relevant accounting standards, depositions and related documents, as well as experience in evaluating such disclosures, Qualcomm was required to disclose the Breach Letter in the 2024 Form 10-K as Qualcomm determined that it was reasonably possible that a material loss contingency may have been incurred related to the potential termination of the QC ALA. Qualcomm would have been obliged to make this disclosure irrespective of the reporting of the contents of the Breach Letter within the Bloomberg Article.

B. Qualcomm’s public disclosures do not convey the significant harm resulting from the Breach Letter as alleged in the Second Amended Complaint.

a) Qualcomm’s Allegations in the Second Amended Complaint

69. In its Second Amended Complaint, Qualcomm alleges that:
- a. “Absent Arm’s interference, these relationships [Smartphone Company and AI and Ecosystem Company] would likely result or would have likely resulted in profitable business opportunities for Qualcomm... These relationships are sufficient to support an intentional-interference claim because the Smartphone Company is already a major Qualcomm customer, while the AI and Ecosystem Company operates a large number of datacenters, is a large buyer of datacenter hardware, and had reached a nearly final termsheet with Qualcomm before Arm’s interference sabotaged that business relationship.”¹⁵⁴
 - b. “As a result of that conduct, these relationships have in fact been disrupted. The AI and Ecosystem Company has delayed finalizing a valuable and nearly final agreement with Qualcomm that it would have finalized absent Arm’s interference, and subsequently finalized a substitute contract with Arm instead, and the Smartphone Company has likewise delayed extending its business relationship with Qualcomm pending additional

¹⁵³ [REDACTED]

¹⁵⁴ Second Amended Complaint, *Qualcomm Inc. And Qualcomm Technologies Inc. v. Arm Holdings PLC*, June 03, 2025, p. 56.

HIGHLY CONFIDENTIAL – ATTORNEYS’ EYES ONLY

assurances. As a result of these delays and interruptions in its business relationships, Qualcomm has suffered actual harm.”¹⁵⁵

- c. “Arm has committed and continues to commit unlawful and unfair business acts or practices prohibited by the UCL. These unfair business acts or practices include . . . repeatedly interfering or attempting to interfere with Qualcomm’s relationships with Qualcomm’s current and prospective customers; wrongfully asserting that it has the right to terminate the QC ALA without any basis in the QC ALA for those assertions, and then leaking the Breach Letter to the media, in an effort to terminate the QC ALA and thereby obstruct Qualcomm’s ability to produce custom cores and thus eliminate a competing supplier of chips compatible with the Arm ISA.”¹⁵⁶
- d. “Arm’s actions are part of a broader campaign to harm or threaten to harm competition” by “employing a variety of unfair acts and practices” “includ[ing]” making misleading statements to Qualcomm’s customers to pressure them not to acquire products from Qualcomm and threatening or attempting to cut off Qualcomm’s access to the ubiquitous Arm ISA with the goal of preventing Qualcomm from developing custom cores that would compete with Arm’s own designs and from marketing products that contain Qualcomm custom cores.”¹⁵⁷
- e. “[I]t has suffered or faces the threat of loss of profits, customers, and potential customers,” and has “standing to bring this [UCL] claim because it has lost money or property as a result of Arm’s unfair competition, including by losing business opportunities that would have been awarded to it absent Arm’s conduct.”¹⁵⁸

¹⁵⁵ Second Amended Complaint, *Qualcomm Inc. And Qualcomm Technologies Inc. v. Arm Holdings PLC*, June 03, 2025, p. 58.

¹⁵⁶ Second Amended Complaint, *Qualcomm Inc. And Qualcomm Technologies Inc. v. Arm Holdings PLC*, June 03, 2025, p. 59-60.

¹⁵⁷ Second Amended Complaint, *Qualcomm Inc. And Qualcomm Technologies Inc. v. Arm Holdings PLC*, June 03, 2025, p. 60.

¹⁵⁸ Second Amended Complaint, *Qualcomm Inc. And Qualcomm Technologies Inc. v. Arm Holdings PLC*, June 03, 2025, p. 61.

HIGHLY CONFIDENTIAL – ATTORNEYS’ EYES ONLY

b) Disclosure in Qualcomm’s 2024 Form 10-K following the receipt of the Breach Letter

70. As mentioned above, a Form 10-K is a mandatory annual disclosure for publicly traded domestic companies.¹⁵⁹ It offers “ a detailed picture of a company’s business, the risks it faces, and the operating and financial results for the fiscal year.”¹⁶⁰ In addition to the information expressly required to be included in a Form 10-K, further “material” information (as defined above) should be added to make the disclosures “not misleading.”¹⁶¹
71. Large, accelerated filers, such as Qualcomm, must file a Form 10-K within 60 days from the end of the fiscal year.¹⁶²¹⁶³ Qualcomm’s first periodic report following the Breach Letter was their 2024 Form 10-K, for the fiscal year ended September 29, 2024, filed on November 6, 2024.¹⁶⁴
72. Qualcomm’s first public disclosure of the Breach Letter and the only direct reference within its 2024 Form 10-K to the Breach Letter was made under Note 7¹⁶⁵ in line with ASC 450-20 as described above:
- “On October 22, 2024, Arm provided us with a notice alleging that we have breached the Qualcomm ALA... Arm’s notice asserts that it will have the right to terminate the Qualcomm ALA if such alleged breaches are not cured within 60 days of such notice. We disagree with Arm’s allegations, including that we are in breach of the Qualcomm ALA.”¹⁶⁶
73. Qualcomm disclosed in the Consolidated Financial Statements filed in its 2024 Form 10-K within Note 1. Significant Accounting Policies – Legal and Regulatory Proceedings that, “if there is at least a reasonable possibility that a material loss may have been incurred associated with pending legal and regulatory proceedings, we disclose such fact...”¹⁶⁷
74. Beyond creating a contingency as described in Note 7, two of Qualcomm’s employees characterized the Breach Letter in deposition as a “material business event”¹⁶⁸ and “risk factor.”¹⁶⁹ [REDACTED]
- [REDACTED]

¹⁵⁹ SEC Investor Bulletin, How to Read a 10-K, January 25, 2021.

¹⁶⁰ SEC Investor Bulletin, How to Read a 10-K, January 25, 2021.

¹⁶¹ SEC Form 10-K, General Instructions, p. 2.

¹⁶² SEC Glossary, Form 10-K.

¹⁶³ Qualcomm Inc., Form 10-K, for fiscal year ended September 29, 2024, p. 2

¹⁶⁴ Qualcomm Inc., Form 10-K, for fiscal year ended September 29, 2024, p. 1.

¹⁶⁵ Qualcomm Inc., Form 10-K, for fiscal year ended September 29, 2024, p. F-23.

¹⁶⁶ Qualcomm Inc., Form 10-K, for fiscal year ended September 29, 2024, p. F-24.

¹⁶⁷ Qualcomm Inc., Form 10-K, for fiscal year ended September 29, 2024, p. F-13.

¹⁶⁸ [REDACTED]

¹⁶⁹ [REDACTED]

HIGHLY CONFIDENTIAL – ATTORNEYS’ EYES ONLY

[REDACTED]

75. The Form 10-K requires disclosure of “material pending legal proceedings.”¹⁷² Qualcomm references that it describes “certain legal matters” in Note 7 under other topics within its 2024 Form 10-K, including in its disclosures of “Risk Factors” impacting its business.¹⁷³

76. Qualcomm included risk factors specific to:

- a. Risks Related to our Operating Businesses notes “We derive a significant portion of our revenues from a small number of customers and licensees, and particularly from their sale of premium tier handset devices. If revenues derived from these customers or licensees decrease or the timing of such revenues fluctuates, our business and results of operations could be negatively affected.”¹⁷⁴ Within this note, Qualcomm refers to “The loss of any one of our significant customers, a reduction in the purchases of our products by any of these customers or the cancellation of significant purchases by any of these customers, whether due to the use of their own integrated circuit products or our competitors’ integrated circuit products, government restrictions, a decline in global, regional or local economic conditions, a decline in consumer demand (or a shift in consumer demand away from new devices in favor of refurbished or secondhand devices), elevated inventory levels at our customers or otherwise, would reduce our revenues and could harm our ability to achieve or sustain expected results of operations. A delay of significant purchases, even if only temporary, would reduce our revenues in the period of the delay.”¹⁷⁵

¹⁷⁰ [REDACTED]

¹⁷¹ [REDACTED]

¹⁷² 17 CFR § 229.103 (Item 103) Legal proceedings, Regulation S-K.

¹⁷³ Qualcomm Inc., Form 10-K, for fiscal year ended September 29, 2024, pp. 29-36.

¹⁷⁴ Qualcomm Inc., Form 10-K, for fiscal year ended September 29, 2024, p. 18 (emphasis omitted).

¹⁷⁵ Qualcomm Inc., Form 10-K, for fiscal year ended September 29, 2024, p. 18.

HIGHLY CONFIDENTIAL – ATTORNEYS’ EYES ONLY

- b. Risks Related to Regulatory and Legal Challenges states “Our business may suffer as a result of adverse rulings in governmental investigations or proceedings or other legal proceedings.”¹⁷⁶ Within this note Qualcomm states “We have been in the past and currently are subject to various governmental investigations and/or legal proceedings. Certain of these matters are described in this Annual Report in ‘Notes to Consolidated Financial Statements, Note 7. Commitments and Contingencies’... Unfavorable resolutions of one or more of these matters have had and could in the future have a material adverse effect on our business, revenues, results of operations, cash flows and financial condition.”¹⁷⁷
- c. Risks Related to Intellectual Property states: “Claims by other companies that we infringe their intellectual property could adversely affect our business.”¹⁷⁸ Within this note Qualcomm states “From time to time, companies have asserted, and may again assert, patent, copyright, trademark or other intellectual property claims against us relating to our technologies or products, including those we have acquired from other companies. These claims have resulted and may again result in our involvement in litigation, and we are currently involved in such litigation, including certain matters described in this Annual Report in “Notes to Consolidated Financial Statements, Note 7. Commitments and Contingencies.”¹⁷⁹ It goes on to say “Furthermore, litigation could severely disrupt the supply of our products and the businesses of our chipset customers and their customers, which in turn could harm our relationships with them and could result in a decline in our chipset sales or a reduction in our licensees’ sales, causing a corresponding decline in our chipset or licensing revenues. Any claims, regardless of their merit, could be time consuming to address, result in costly litigation, divert the efforts of our technical and management personnel, cause product release or shipment delays and/or damage to our customer relationships, any of which could have an adverse effect on our results of operations and cash flows.”¹⁸⁰

77. However, these risk factor disclosures were general disclosures that were similarly provided in Qualcomm’s SEC filings before and after the Breach Letter, including disclosure after the Breach Letter

¹⁷⁶ Qualcomm Inc., Form 10-K, for fiscal year ended September 29, 2024, p. 29 (emphasis omitted).

¹⁷⁷ Qualcomm Inc., Form 10-K, for fiscal year ended September 29, 2024, p. 29.

¹⁷⁸ Qualcomm Inc., Form 10-K, for fiscal year ended September 29, 2024, p. 33 (emphasis omitted).

¹⁷⁹ Qualcomm Inc., Form 10-K, for fiscal year ended September 29, 2024, p. 33.

¹⁸⁰ Qualcomm Inc., Form 10-K, for fiscal year ended September 29, 2024, p. 34.

HIGHLY CONFIDENTIAL – ATTORNEYS’ EYES ONLY

was withdrawn.¹⁸¹ Qualcomm does not discuss any incremental material adverse impact stemming from the Breach Letter or its publication by Bloomberg.

78. Item 3 Legal Proceedings is Qualcomm’s opportunity to describe significant¹⁸² pending lawsuits or other legal proceedings, other than ordinary routine litigation incidental to the business in its Form 10-K.¹⁸³ Qualcomm’s Item 3 cross refers to “Notes to Consolidated Financial Statements, Note 7.”¹⁸⁴ As noted above, Note 7 is Qualcomm’s first public disclosure of the Breach Letter and no incremental commercial risk anticipated because of the Breach Letter or its publication by Bloomberg is discussed within Note 7.¹⁸⁵

79. Item 7 Management’s Discussion and Analysis of Financial Condition and Results of Operations, contains the section “Looking Forward.”¹⁸⁶ While there is disclosure of potential “material adverse effect on our business, revenues, results of operations, financial condition and cash flows,”¹⁸⁷ as a result of unfavorable resolutions to the legal proceedings described in Note 7, I observe this statement relates to the fact that the Arm litigation was due to conclude at the end of the 2024 calendar year and the risk associated with that litigation may materialize in the coming period. It does not discuss any interim incremental adverse impact stemming from the Breach Letter or its publication by Bloomberg.

80. Qualcomm’s 2024 Form 10-K Item 9A Controls and Procedures specifically discusses Qualcomm’s Conclusion Regarding the Effectiveness of Disclosure Controls and Procedures¹⁸⁸:

“Under the supervision and with the participation of our management, including our principal executive officer and our principal financial officer, we conducted an evaluation of our disclosure controls and procedures... [and] [b]ased on this evaluation, our principal executive officer and our principal financial officer concluded that our disclosure controls and procedures were effective as of the end of the period covered by this Annual Report.”¹⁸⁹

¹⁸¹ According to Qualcomm Inc. Form 10-Q, for the quarterly period quarter ended December 29, 2024, the Breach Letter was withdrawn by Arm on January 8, 2025.

¹⁸² SEC Investor Bulletin, How to Read a 10-K January 25, 2021.

¹⁸³ 17 CFR § 229.103 (a) (Item 103) Legal proceedings, Regulation S-K.

¹⁸⁴ Qualcomm Inc., Form 10-K, for fiscal year ended September 29, 2024, p. 38.

¹⁸⁵ Qualcomm Inc., Form 10-K, for fiscal year ended September 24, 2023, p. F-23.

¹⁸⁶ Qualcomm Inc., Form 10-K, for fiscal year ended September 24, 2023, p. 45.

¹⁸⁷ Qualcomm Inc., Form 10-K, for fiscal year ended September 24, 2023, p. 47.

¹⁸⁸ Qualcomm Inc., Form 10-K, for fiscal year ended September 29, 2024, p. 49.

¹⁸⁹ Qualcomm Inc., Form 10-K, for fiscal year ended September 29, 2024, p. 49.

HIGHLY CONFIDENTIAL – ATTORNEYS’ EYES ONLY

81. Qualcomm’s disclosure controls and procedures were determined to be effective.¹⁹⁰ However, Qualcomm did not disclose the nature of the material adverse effects resulting from the Breach Letter or its publication in the Bloomberg Article that Qualcomm alleged it suffered in the Second Amended Complaint. Further, Qualcomm was required to, and did, disclose the Breach Letter in its 2024 Form 10-K, and Qualcomm would have been obligated to do so absent the Bloomberg Article.

c) Discussion of the Breach Letter in Subsequent Investor Events

82. Qualcomm participated in three investor events in the period following receipt of the Breach Letter and the release of the verdict of the Arm Complaint¹⁹¹: Q4 2024 Earnings Conference Call on November 6, 2024;¹⁹² Investor Day 2024: IoT and Automotive Diversification Update on November 19, 2024;¹⁹³ and UBS Global Technology and AI Conference on December 4, 2024.¹⁹⁴
83. According to the transcripts of these events available on Qualcomm’s website, Qualcomm discussed the Breach Letter in two out of three of these investor events. In both instances the cancellation of the QC ALA was discussed by Qualcomm executives only in response to questions raised by participants and there was no mention of any material adverse impacts on business relationships, despite the analysts’ direct questions regarding the stakes and impacted business lines:
- a. During the Q4 2024 Qualcomm Earnings Conference Call, held on the same date the 2024 Form 10-K was filed, November 6, 2024, there was an exchange about the Arm Complaint. Joe Moore, a Morgan Stanley Analyst, asked, “And then I don’t think you mentioned it. Anything you could say about the Arm dispute? Because that would help us understand what’s the stake there.”¹⁹⁵ to which Akash Palkhiwala (Qualcomm’s Chief Financial Officer and Chief Operating Officer) (“AP”) replied, “we have a very broad, well-established license rights...we are very confident that those rights will be affirmed. The trial is scheduled for December, and so we’re looking forward to addressing Arm’s claims at that point.”¹⁹⁶ There was no other reference to the ongoing legal proceedings with ARM, the cancellation of the QC ALA, or to the Breach Letter having an impact on

¹⁹⁰ Qualcomm Inc., Form 10-K, for the fiscal year ended September 29, 2024, p. 49.

¹⁹¹ Qualcomm Press Announcement, December 20, 2024.

<https://www.qualcomm.com/news/releases/2024/12/qualcomm-statement-on-trial-verdict-win#:~:text=We%20are%20pleased%20with%20today's,by%20Qualcomm's%20contract%20with%20ARM>.

¹⁹² Qualcomm Q4 2024 Earnings Call Transcript, November 06, 2024.

¹⁹³ Qualcomm Investor Day 2024 Transcript, November 19, 2024.

¹⁹⁴ Qualcomm UBS Global Tech Conference Transcript, December 04, 2024.

¹⁹⁵ Qualcomm Q4 2024 Earnings Call Transcript, November 06, 2024, p. 7.

¹⁹⁶ Qualcomm Q4 2024 Earnings Call Transcript, November 06, 2024, p. 7.

HIGHLY CONFIDENTIAL – ATTORNEYS’ EYES ONLY

customer relationships or a potential impact on or creating uncertainty about earnings identified from the transcript.¹⁹⁷

- b. At the Qualcomm Investor Day on November 19, 2024, AP responded to a question in relation to Arm potentially cancelling licenses and whether Qualcomm had considered moving to another instruction set architecture (“ISA”) by saying, “we have broad rights under the license that we have with ARM for custom design course, and we’re very comfortable that those will be affirmed. Trial starts next month.”¹⁹⁸ There was no other reference to the ongoing legal proceedings with ARM, the cancellation of the QC ALA, or to the Breach Letter having an impact on business relationships or a potential impact on or creating uncertainty about earnings identified from the transcript.¹⁹⁹ Qualcomm received follow-up questions to clarify whether Qualcomm could move the Oryon core, underpinned by Arm architecture, and use the Nuvia platform on another ISA.²⁰⁰

- 84. There was no reference to the ongoing legal proceedings with ARM, the cancellation of the QC ALA, the Breach Letter, or the Bloomberg Article in the transcript for the UBS Global Technology and AI Conference held on December 4, 2024.²⁰¹
- 85. Qualcomm did not disclose the nature of any material adverse impact resulting from the Breach Letter or its publication in the Bloomberg Article as alleged in the Second Amended Complaint.

d) Discussion of the Breach Letter in Q1 2025 Form 10-Q and its related Investor Event

- 86. Qualcomm’s Q1 2025 Form 10-Q for the quarterly period ended December 29, 2024, was the first filing for which underlying performance could have been impacted by the Breach Letter. The Q1 2025 Form 10-Q made no reference to any materialized loss of customers, transactions or increased costs because of the Breach Letter or its publication in the Bloomberg Article as alleged in Qualcomm’s Second Amended Complaint.²⁰² The only reference to the Breach Letter was an update to the “Notes to Condensed Consolidated Financial Statements, Note 5. Commitments and Contingencies – Legal and Regulatory Proceedings” (“Note 5”) where it states: “On January 8, 2025 Arm notified us that it was withdrawing its

¹⁹⁷ Qualcomm Q4 2024 Earnings Call Transcript, November 06, 2024.

¹⁹⁸ Qualcomm Investor Day 2024 Transcript, November 19, 2024, p. 29.

¹⁹⁹ Qualcomm Investor Day 2024 Transcript, November 19, 2024.

²⁰⁰ Qualcomm Investor Day 2024 Transcript, November 19, 2024, p. 29.

²⁰¹ Qualcomm UBS Global Tech Conference Transcript, December 04, 2024.

²⁰² Qualcomm Inc., Form 10-Q, for the quarterly period ended December 29, 2024.

HIGHLY CONFIDENTIAL – ATTORNEYS’ EYES ONLY

October 22, 2024 notice of breach and indicated that it has no current plan to terminate the Qualcomm ALA, while reserving its rights pending the outcome of the ongoing litigation.”²⁰³ The Q1 2025 Form 10-Q makes no reference to the Bloomberg Article.²⁰⁴

87. In Item 2. MDA of the Q1 2025 Form 10-Q, when referencing Note 5 Qualcomm states “Litigation is inherently uncertain, and, while we intend to continue to vigorously defend ourselves in such matters, the unfavorable resolution of one or more of these matters could have a material adverse effect on our business, results of operations, financial condition or cash flows.”²⁰⁵ These general disclosures were similarly provided in 2024 Form 10-K prior to the Breach Letter being withdrawn.
88. In fact, in the Q1 2025 earnings call on February 5, 2025, Mr. Amon opens the call stating, “In fiscal Q1, we delivered record revenues of \$11.7 billion in non-GAAP earnings per share of \$3.41.”²⁰⁶
89. Later in the same call, Mr. Amon states: “Before I turn the call over to Akash, I would like to provide an update on the Arm versus Qualcomm trial from December 2024. The jury's verdict vindicated Qualcomm's CPU innovations and affirmed the Qualcomm’s contract with Arm provides a license for Qualcomm's products containing our proprietary Orion CPUs in industries such as smartphones, automotive, next-generation PCs, IoT, and data center. In addition, Arm recently notified us that it was withdrawing its October 22, 2024 notice of breach and indicated that it has no current plan to terminate the Qualcomm architecture license agreement. We're excited to continue to develop performance-leading, world-class products that benefit consumers worldwide that include our incredible Orion custom CPUs.”²⁰⁷
90. Despite the allegations detailed above that the Breach Letter caused harm, the only reference to it in the 2024 Form 10-K was in Note 7,²⁰⁸ where it is noted as an update to ongoing litigation, not as a separate material event having an impact on customer relationships or a potential impact on or creating uncertainty about earnings. There are no references in any investor events held by Qualcomm from the receipt of the Breach Letter to the date of its withdrawal as to the Breach Letter or its publication in the Bloomberg

²⁰³ Qualcomm Inc., Form 10-Q, for the quarterly period ended December 29, 2024, p. 13.

²⁰⁴ Qualcomm Inc., Form 10-Q, for the quarterly period ended December 29, 2024.

²⁰⁵ Qualcomm Inc., Form 10-Q, for the quarterly period ended December 29, 2024, p. 20.

²⁰⁶ Qualcomm Q1 2025 Earnings Transcript, February 05, 2025, p. 3; *see also* Qualcomm Q3 2025 Earnings Call Transcript, July 30, 2025, p. 4–6 (Mr. Amon said, “While we are in the early stages of this expansion, we are engaged with multiple potential customers and are currently in advanced discussions with a leading hyper-scaler. If successful, we expect revenues to begin in the fiscal ‘28 timeframe. . . . We have been executing on a product.”).

²⁰⁷ Qualcomm Q1 2025 Earnings Transcript, February 05, 2025, p. 5

²⁰⁸ Qualcomm Inc., Form 10-K, for fiscal year ended September 29, 2024, pp. F-23–24.

HIGHLY CONFIDENTIAL – ATTORNEYS’ EYES ONLY

Article as having an impact on customer relationships or a potential impact on or creating uncertainty about earnings. In the Q1 2025 Form 10-Q, there is reference to the Breach Letter being withdrawn.²⁰⁹ There is no reference to the Breach Letter or its publication in the Bloomberg Article having caused or potentially caused any harm to customer relationships since it was received, and there is no reference to it having any potential impact on or creating uncertainty about earnings on future revenue or earnings as alleged in Qualcomm’s Second Amended Complaint.

91. In my experience, if the Breach Letter or its publication in the Bloomberg Article had any or all of the material adverse impact set out in Qualcomm’s Second Amended Complaint—i.e., interfering, interrupting or causing delays with Qualcomm’s business relationships with the “major customer” or the “large buyer” or sabotaging its business relationships, resulting in actual harm—these impacts would have been mentioned somewhere within Qualcomm’s periodic reporting and related investor events, if they were material. Qualcomm’s failure to make any mention of the nature of any adverse or incremental adverse impact on any business relationship because of the Breach Letter or its publication in the Bloomberg Article within in its 2024 Form 10-K, during investor events, investor calls or its first quarter Form 10-Q for the 2025 fiscal year²¹⁰ suggest to me, based on my experience evaluating these types of disclosures, that Qualcomm did not consider that the Breach Letter or its publication in the Bloomberg Article had a material adverse impact as alleged in Qualcomm’s Second Amended Complaint.

v. Opinions and Conclusion

92. It is my opinion that Qualcomm was required to disclose the Breach Letter in the 2024 Form 10-K as it was reasonably possible that a material loss contingency may have been incurred related to the potential termination of Qualcomm’s ALA. Qualcomm would have been obligated to make this disclosure irrespective of the reporting of the contents of the Breach Letter within the Bloomberg Article.
93. For all the reasons stated above, it is my opinion that the Breach Letter and its publication in the Bloomberg Article did not have the material adverse impact on Qualcomm that Qualcomm described in the Second Amended Complaint, as there was no disclosure whatsoever from receipt of the Breach Letter to Qualcomm’s Q1 2025 earnings call on February 5, 2025 that indicates that the Breach Letter or its publication in the Bloomberg Article had any material adverse impact relating to interfering, interrupting or causing delays with Qualcomm’s business relationships with the “major customer” or “large buyer” or

²⁰⁹ Qualcomm Inc., Form 10-Q, for the quarterly period ended December 29, 2024, p. 13.

²¹⁰ Qualcomm Inc., Form 10-Q, for the quarterly period ended December 29, 2024, p. 1.

HIGHLY CONFIDENTIAL – ATTORNEYS' EYES ONLY

sabotaging its business relationships resulting in actual harm as alleged in the Second Amended Complaint.

VI. SIGNATURE AND RIGHT TO MODIFY

94. My opinions are based upon the information available to me as of the date of this report. It is possible that additional information may affect my opinions herein. I reserve the right, in the event further information becomes available, to modify or supplement my analysis and opinions.

Signed this 5th day of September 2025

A handwritten signature in black ink, appearing to read "Steven Richards", written over a horizontal line.

Steven Richards, CPA

Exhibit 1



Expert Report of Steven Richards
Exhibit 1 – Steven Richards Curriculum Vitae

Steven E. Richards

Senior Managing Director

2000 K Street NW 12th Floor | Washington, DC 20006



Contact

Main +1.202.797.1111
Direct +1.202.507.6941
Mobile +1.202.412.6685
steven.richards@ankura.com

Education

BA, Accounting, Washington & Jefferson
College

Certifications

Certified Public Accountant

Affiliations

American Institute of Certified Public
Accountants
Pennsylvania Institute of Certified Public
Accountants
Association of Securities and Exchange
Commission Alumni

Steven Richards is a Senior Managing Director at Ankura in the Washington, DC office. Steven has over 27 years of experience in forensic accounting.

Steven provides a broad range of expert and consulting services involving financial reporting and disclosure, accounting advisory, and auditor liability. He is the Global Business Group Leader for the Risk, Forensic and Compliance practice. He advises law firms, Audit committees, C-Suite Executives and auditors on corporate governance, internal investigations, and audit and regulatory matters, including the assessment of compliance with SEC, PCAOB and other regulatory requirements. He has worked with both public and private companies from start-ups to multinational enterprises.

Prior to joining Ankura in 2016, Steven was a Partner in the Forensic Advisory practice at Deloitte LLP ("Deloitte"), where he conducted numerous internal investigations of SEC registrants and regulated entities. He also served as a Senior Advisory Partner to Deloitte leadership and its Office of General Counsel regarding audit regulation, public policy matters, and regulatory enforcement matters. During his time at Deloitte, Steven provided advice on government, regulatory, and professional matters involving the audit practice, advised on audit regulatory issues involving public policy, inspections, standards, rules, litigation, and enforcement matters involving the Public Company Accounting Oversight Board ("PCAOB"), the Securities and Exchange Commission ("SEC"), and foreign audit and securities regulators.

From 2011 through 2014 Steven was the former Special Advisor to PCAOB Chairman, James Doty, where he was involved in policy and operations for all aspects of PCAOB oversight, including the enforcement program, adjudication proceedings, standard setting, evolution of the domestic and international inspections program, development of the broker-dealer inspection program, and risk analysis.

From 2014 through 2015, Steven was the former Senior Advisor to the PCAOB's Director of the Division of Enforcement and Investigations, including work on all aspects of policy and operations for the Enforcement program, evaluation of investigations to determine if there were violations of professional standards or rules, coordination with other domestic financial regulators, division-wide initiatives, division priorities, and case management.

Steven has served as a former Assistant Chief Accountant at the Securities and Exchange Commission, Division of Enforcement's Office of Chief Accountant from 2004 through 2008. During his tenure at the SEC, Steven performed numerous fraud and financial reporting investigations involving SEC registrants, senior executives, external auditors, and other third parties. Steven routinely assessed a variety of technical accounting, disclosure, and internal control matters, as well as auditor compliance with professional standards, including PCAOB standards, and provided advice on recommendations of enforcement matters under SEC Rules of Practice including Rule 102(e).



Steven E. Richards

Steve worked closely with both the SEC's trial counsel and other law enforcement authorities during the investigation and litigation of high-profile matters.

Before and after his work at the SEC, from April 2002 to May 2004 and from July 2008 to March 2011, Steven worked in the Forensic and Litigation Consulting practice at FTI Consulting, Inc. ("FTI"). During his time at FTI, Steven managed numerous multidisciplinary teams on high-profile matters including one of the largest Ponzi schemes in history. He also performed numerous forensic and internal investigations involving SEC registrants and regulated entities, privately held companies, senior executives, external auditors, and other third parties, including interacting with external auditors and assessed their compliance with professional obligations.

Steven started his career as an auditor at Arthur Andersen LLP, where he performed financial statement audits of both publicly traded and privately held companies in a variety of industries.

In 2018, Steven became a member of the American Institute of Certified Public Accountants ("AICPA") Forensic and Litigation Services Fraud Task Force. The Fraud Task Force provides information to AICPA members regarding fraud detection, investigation, and prevention.

In 2015, Steven was named the Deloitte representative to the Center for Audit Quality ("CAQ") – Anti-Fraud Collaboration ("AFC"). The CAQ's AFC promotes the deterrence and detection of financial reporting fraud through the development of thought leadership, awareness programs, and educational opportunities for the primary participants in the financial reporting supply chain.

Selected Professional Experience

Expert/Consultant – SEC Matters

- **Investigation of Percentage of Completion and Expect Cost for Long-Term Defense Contracts – For Aerospace and Defense Multinational** – Retained by counsel of a multinational Aerospace and Defense contractor to perform an internal investigation of the revenue recognition under the percentage of completion method for multi-year multibillion dollar contracts, the related estimate of the cost to complete and the basis of changes to those estimates over time, as well as the related disclosures. Further, evaluated related corporate governance matters. Participated in multiple meetings with the Department of Justice and SEC's Home Office.
- **Investigation of Internal Control Whistleblower Allegations of Internal Audit Director** - Retained by counsel to audit committee of a Latin American financial institution and money transfer entity to perform an internal investigation into whistleblower allegations related to undue pressure on Internal Audit and other internal control circumventions.
- **Investigation of Short seller Allegations of Financial Institution** - Retained by counsel to the audit committee of a Latin American start up financial technology and money transfer entity to perform and internal investigation into allegations related, control and segregation of merchant funds, related party transactions, accuracy and completeness of disclosure, revenue recognition and appropriateness of reporting to safety and soundness regulator.
- **Investigation of Revenue Recognition and Inventory Issues** - Retained by counsel to audit committee of a global mobile technology and accessories company to perform and internal investigation into whistleblower allegations related to sales return reserve accruals and excess and obsolete inventory. Participated in multiple meetings with SEC's Salt Lake City, UT Office.
- **Investigation of Revenue Recognition and Internal Control** - Retained by counsel to start-up mobile technology company to perform and internal investigation into revenue recognition and related governance and internal control issues. Participated in multiple meetings with SEC's Washington, DC Office.
- **Investigation of Revenue Recognition Issues** – Retained by counsel of a large electric utility and distribution company to perform an internal investigation of whistleblower allegations related to estimates in the revenue recognition process and related impacts on internal controls, disclosure and other reporting obligations. Participated in multiple meetings with auditors and the SEC's Boston, MA Office.
- **Investigation of Revenue Recognition Issues** - Retained by counsel for audit committee of pharmaceutical company to perform internal investigation of various revenue recognition practices. Led a team of more than 20 forensic professionals in an internal investigation into allegations of undisclosed relationships, financial reporting, and disclosure violations and the use of an undisclosed affiliate to accelerate revenue recognition and related corporate governance matters. Participated in multiple meetings with SEC's Washington, DC Office.



Steven E. Richards

- **Investigation of Executive Perquisites, Revenue Recognition and Related Party Transactions** - Retained by counsel for company of multinational energy infrastructure manufacturing company to perform internal investigation of whistleblower allegations including executive perquisites, revenue recognition and related party transactions at largest subsidiary post acquisition. Led a team of more than 20 forensic professionals in an internal investigation into allegations of undisclosed relationships, financial reporting, and disclosure violations and the use of an undisclosed affiliate to accelerate revenue recognition, as well as related corporate governance matters.
- **Investigation of Percentage of Completion and Expect Cost to Construct Energy Facilities** – Retained by counsel to the audit committee of a multinational energy infrastructure company to perform an internal investigation of the construction of several multibillion dollar power plants and the related impact on revenue recognition, loss contracts, the related estimate of the cost to complete and related disclosures. Further, evaluated related corporate governance matters. Participated in multiple meetings with the SEC's Miami, FL Office.
- **Investigation of Restructuring and non-GAAP measures** - Assisted counsel in the representation of a public global manufacturer in an SEC enforcement inquiry relating to the accounting and disclosure of restructuring cost and non-GAAP measures. Participated in multiple meetings and presentations to the SEC's Washington, DC Office.
- **Investigation of Revenue Recognition and Related Changes in Estimates** - Retained by counsel for a large energy infrastructure company relating to allegations that there were changes in estimates to complete that had an impact on amount and timing of revenue recognition and total loss recognized on loss contracts. Supported counsel in interactions with SEC's Washington, DC Office.
- **Investigation of Revenue Recognition and non-GAAP measures** - Assisted counsel in the representation of a public global manufacturer of industrial products in an SEC enforcement inquiry relating to the accounting and disclosure of revenue recognition and non-GAAP measures. Participated in multiple meetings and presentations to the SEC's Washington, DC Office.
- **Investigation of Revenue Recognition and Disclosure** – Retained by counsel for the audit committee of a public animal health products and pharmaceutical company to perform an internal investigation into whistleblower concerns related to irregularities in revenue recognition, including allegations of channel stuffing and bill-and-hold transactions. Further, reviewed related corporate governance matters. Participated in multiple meetings and presentations to the SEC's Forth Worth, TX Office.
- **Investigation into Structured Financial Instruments** – Retained by counsel for the audit committee of a Fortune 50 financial institution to perform an internal investigation of accounting and reporting issues relating to derivatives, securitizations, and other structured financial instruments. Evaluated related internal controls and corporate governance. Participated in Congressional hearings, multiple meetings and presentations to the SEC's Washington, DC Office, as well as several other Federal Regulators.
- **Investigation into Perquisites, Related Parties, and Revenue Recognition Issues** – Retained by counsel for that audit committee of a body armor manufacturer to conduct an internal investigation focused on the existence of undisclosed personal expenses of senior management, revenue recognition, and related-party transactions. Participated in multiple meetings with the SEC's Miami, FL Office.
- **Revenue Recognition and Translation Accounting Expert** – Retained as accounting expert and consultant by counsel in the representation of a Chief Financial Officer for a large multinational manufacturer relating to the accounting for revenue recognition and intercompany loans and related translation adjustments, which was being investigated by and SEC's Philadelphia, PA Office
- **Revenue Recognition and Disclosure Expert** – Assisted counsel in the representation of a Chief Executive Officer of a technology and data measurement company related to whistleblower allegations around revenue recognition, including multiple element arrangements and disclosure issues conducted by the SEC's Washington, DC Office.
- **Revenue Recognition and Gain on Sale Accounting Expert** - Retained as expert and consultant by counsel to assist in the representation of a Chief Executive Officer of a retail brand company in connection with an SEC investigation by SEC's Washington, DC office, as well as the Department of Justice's New York Office. Evaluated revenue recognition and gain on sale transaction.
- **Revenue Recognition and Inventory Accounting Expert** - Retained as accounting consulting expert by counsel to assist a large technology equipment reseller in connection with an SEC investigation by the Washington, DC office. Evaluated revenue recognition, sales practices and internal controls as well as inventory transactions and related disclosures.
- **Investigation of Percentage of Completion and Expect Cost to Construct Energy Facilities** – Retained by counsel to a large energy infrastructure company to assist in an investigation by the SEC's Fort Worth office related to the construction of multibillion-dollar natural gas infrastructure projects. The issues in question involved revenue recognition and the related estimate of the cost to complete and related disclosures.



Steven E. Richards

Expert/Consultant – Other Matters

- **Investigation of Ponzi Scheme** - Retained as consulting expert by counsel representing SIPC trustee in the largest ever ponzi scheme of a Registered Investment Advisor. Investigated trading false trading records, determined who knew of the false trading, or should have, evaluated fake compliance records and related process to mislead regulators. Lead team of more than 80 personnel in investigation.
- **Investigation of Executive Perquisites, Insider Transactions and Related Party Issues** - Retained by counsel of a start-up life sciences company to perform internal investigation of whistleblower allegations related to insider perquisites, insider transactions, compensation arrangement, related party transactions and the related internal control and corporate governance.
- **Investigation of Revenue Recognition and Deferred Expense Recognition** - Retained by counsel for that audit committee of a large insurance company focused on whistleblower allegations related to changes in estimates effecting revenue recognition and the deferral of expenses.
- **Investigation of Perquisites and Related Party Transactions** – Retained to assist counsel in an internal investigation related to undisclosed perquisites and related party transactions at a start-up media and content company.
- **Investigation of Inventory Losses** – Retained to assist counsel in an internal investigation related to inventory losses, as well as undisclosed inappropriate personal expenses reimbursement for large national material retailer.
- **Post-Acquisition Accounting Dispute** - Retained as accounting expert by counsel for large multinational technology company in an arbitration involving revenue recognition, impairment and capitalization of costs under US GAAP.
- **Post-Acquisition Accounting Dispute** - Retained as accounting expert by counsel for large multinational chemical and compound manufacture in an arbitration involving the viability of technology assets and related impairment, as well as expense recognition under US GAAP.

Internal Controls

- **Internal Controls Consulting** - Retained by counsel for energy company to assist with enhancing the company's internal controls, corporate governance and related conclusions surrounding material weaknesses.
- **Internal Controls Consulting** – Retained by counsel to assist multinational energy company in improving its internal controls over estimates to complete construction projects.
- **Internal Controls Consulting** – Retained by counsel to assist mortgage finance company its internal controls over compliance with accounting policy and changes in policy.

Expert/Consultant - Auditor Liability – Civil Matters

- **Audit Firm Defense Expert for National Audit Firm in Civil Litigation** - Retained as consulting expert by counsel an auditing firm defending a civil lawsuit filed by a former client in the energy industry. Assist in drafting expert report in defense of claims of alleged violations of auditing standards.
- **Audit Firm Defense Expert for National Audit Firm in Civil Litigation** – Retained as consulting expert by an auditing firm defending a lawsuit filed by a former audit client. Expert report and deposition testimony pending.

Expert/Consultant - Auditor Liability – PCAOB/SEC

- **PCAOB Auditor Investigation** - Retained as audit/accounting expert and consultant by counsel for an audit firm in connection with a PCAOB investigation related to the evaluation of a specialist, supervision, evaluation of audit evidence and professional skepticism in the audit revenue recognition and deferred tax assets in the construction industry. Performed detailed assessment of these issues for compliance with GAAP, PCAOB Auditing Standards and SEC rules and assisted in presentations to PCAOB enforcement staff. Matter closed after Statement of Position.
- **PCAOB Auditor Investigation** - Retained as an accounting/audit expert and consultant by foreign audit firm in connection with a PCAOB investigation related to supervision, sampling, work of another auditor, evaluation of audit evidence and professional skepticism in the audit relating to extrapolated errors, revenue recognition and assessment of internal controls of a telecommunications company. Performed detailed assessment of these issues for compliance with GAAP, PCAOB Auditing Standards and SEC rules and made presentation to PCAOB enforcement staff. Assisted in drafting of Statement of Position.



Steven E. Richards

- **PCAOB Auditor Investigation** - Retained as consulting expert by counsel representing senior manager in connection with a PCAOB investigation related to evaluation of alteration of workpapers and related areas of inquiry in the firm's system of quality control.
- **PCAOB Auditor Investigation** - Retained as consulting expert by counsel representing audit firm in connection with a PCAOB investigation related to evaluation of revenue recognition and related areas of inquiry in the firm's system of quality control.
- **PCAOB Auditor Investigation** - Retained as consulting expert by audit firm in connection with a PCAOB investigation related to evaluation of workpaper retention requirement and related quality system of quality control.
- **PCAOB Auditor Investigation** - Retained as audit/accounting expert and consultant by counsel for an audit firm in connection with a PCAOB investigation related to the supervision of the audit, risk assessment, evaluation of audit evidence and professional skepticism in the audit of loan loss reserves at a financial institution. Performed detailed assessment of these issues for compliance with GAAP, PCAOB Auditing Standards and SEC rules and assisted in drafting of Statement of Position.
- **PCAOB Auditor Investigation** - Retained as audit/accounting expert and consultant by counsel for an audit firm in connection with a PCAOB investigation related to revenue recognition at a software company. Performed detailed assessment of these issues for compliance with GAAP, PCAOB Auditing Standards and SEC rules and assisted in drafting of Statement of Position. Matter closed after Statement of Position.
- **PCAOB Auditor Investigation** - Retained as audit/accounting expert and consultant by counsel for an audit firm in connection with a PCAOB investigation related to revenue recognition at a software company. Performed detailed assessment of these issues for compliance with GAAP, PCAOB Auditing Standards and SEC rules and assisted in drafting of Statement of Position. Matter closed after Statement of Position.
- **PCAOB Auditor Investigation** - Retained as audit/accounting expert and consultant by counsel for an audit firm in connection with a PCAOB investigation related the audit of broker-dealer net capital calculation and qualifying assets. Performed detailed assessment of these issues for compliance with GAAP, PCAOB Auditing Standards and SEC rules and made presentation to PCAOB enforcement staff. Matter subsequently closed.
- **PCAOB Auditor Investigation** - Retained as audit/accounting expert and consultant by counsel for an audit firm in connection with a PCAOB investigation related the audit of related party and significant unusual transactions at a Chinese based technology company. Performed detailed assessment of these issues for compliance with GAAP, PCAOB Auditing Standards and SEC rules and assisted in drafting of Statement of Position.
- **SEC Auditor Investigation** - Retained by counsel for auditing firm as a technical accounting and auditing consultant in connection with investigation by the SEC's Washington, DC Office involving revenue recognition issues and compliance with PCAOB Auditing Standards.
- **SEC Auditor Investigation** - Retained as consulting expert by counsel representing regional audit firm in connection with an SEC investigation of Registered Investment Advisor regarding use of a specialist and valuation of securities and related haircuts, as well as related areas of inquiry in the firm's system of quality control.
- **SEC Auditor Investigation** - Retained as consulting expert by counsel representing audit firm in connection with an SEC investigation of national audit firm regarding use the auditing of revenue, as well as related areas of inquiry in the firm's system of quality control.
- **PCAOB Auditor Investigation** - Retained as audit/accounting expert and consultant by counsel for an audit firm in connection with a PCAOB investigation related the audit of related party transactions and allowance for loan losses at a US based alternative financing company. Performed detailed assessment of these issues for compliance with GAAP, PCAOB Auditing Standards and SEC rules and assisted in drafting of Statement of Position.
- **PCAOB Auditor Investigation** - Retained as audit/accounting expert and consultant by counsel for an audit firm in connection with a PCAOB investigation related the capitalization of assets for a mining company. Performed detailed assessment of these issues for compliance with GAAP, PCAOB Auditing Standards and SEC rules and assisted in drafting responses to PCAOB inquiries.

Expert/Consultant - Auditor Liability – Independence

- **SEC Auditor Investigation** - Retained as accounting expert and consultant by counsel for an audit firm in connection with an investigation by the SEC's Washington, DC Office involving auditor independence. Participated in meetings and drafting Wells Response. Matter closed with no action.



Steven E. Richards

• **PCAOB Auditor Investigation** - Retained by counsel for an audit firm as a technical accounting and auditing consultant in connection with investigations by the PCAOB involving auditor independence and qualifications issues.

• **PCAOB Auditor Investigation** - Retained by counsel for auditing firm as a technical accounting and auditing consultant in connection with investigations by the PCAOB involving auditor independence relating to the firm's system of quality control for former employees obtained financial reporting oversight roles at audit clients.

Expert/Consultant - Auditor Liability – Independent Consultants/Monitor

• **Assisted in Preparation for Independent Monitor** – Retained as consultant by counsel for an audit firm in connection with an SEC Order that required an Independent Consultant to evaluate the audit firm audit methodology relating to several specific areas. Consulted with firm quality control leadership and did a preliminary evaluation of the audit methodology and related system of quality control and identified enhancement in advance of the Independent Consultant. Assist the firm in drafting a report covering enhancements identified and the assessment of the system of quality control.

• **Independent Consultant under and SEC Order** – Retained an Independent Consultant for an audit firm subject to an SEC Order requiring an Independent Consultant to review the audit firm's system of quality control around independence. Evaluated all elements of Independence compliance and issued report to the firm and SEC's Chicago Regional Office identifying enhancements to the firm's system of quality control.

Transactional Tracing

• **Cash Tracing Investigation** - Managed a multidisciplinary investigation team retained by the Securities Investor Protection Act Trustee for the global liquidation of Bernard L. Madoff Investment Securities LLC, one of the largest financial frauds in US history. Oversaw the forensic investigation and data analysis work streams, including the supervision of forensic accountants, economists, market structure experts, and data analysts to identify the flow of funds and related customer account activity.

• **Campaign Finance Matter** – Retained as forensic accounting expert by counsel in connection with an embezzlement investigation related to campaign donations misappropriated by the campaign treasurer and related false campaign finance filings. Participated in meetings with the State Attorney's Office investigators.

• **Cash Tracing Investigation** – Led internal investigation, on behalf of Reinsurance Company, into \$80 million fraud relating to misappropriated policy premiums by sub-insurer. The investigation involved tracing significant flows of funds among many different financial institutions and related entities.

• **Intercompany Transaction Tracing** - Retained by counsel as the forensic expert for the Independent Board Members for a communications company in a bankruptcy proceeding in response to potential claims relating to intercompany transactions.

• **Transactional Tracing** – Retained by counsel for registered investment advisor to perform tracing analysis of investor contributions, use of funds and withdrawals.

• **Cash Tracing Investigation** – Retained by counsel for Investment Advisor to perform cash-tracing analyses to identify and summarize sources and uses of funds over a multi-year period.

• **Transactional Tracing** - Retained by counsel for alternative investment fund to perform tracing analysis of investor contributions, use of funds and withdrawals and related rates of returns.

Litigation Engagements - Testified as an Expert at Trial or by Deposition – Last Four Years

• **Deposed as an auditing standards and external audit expert in a State Supreme Court Action (N.Y. Sup Ct., Index No. 160830/2022; 160834/2022; and 160964/2022).** Retained to offer expert opinions and testimony relating to an external auditor's compliance with auditing standards. Further testified as to the responsibilities and related professional obligations of an external auditor with regard to fraud perpetrated by management.

• **Deposed as a financial reporting, disclosure, internal audit and external audit expert in a District Court Action (S.D. of TX, Houston Division, Case No. 4:18-CV-4330).** Retained to offer expert opinions and testimony relating to the revenue and costs for large infrastructure projects under percentage-of-completion accounting, as well as their related disclosure. Further testified to the role of Internal Audit in an enterprise and as it related to financial reporting. Also testified as an expert covering business combinations including subsequent purchase price adjustments. Further testified as to the role and purpose of an audit of financial statements, as well as



Steven E. Richards

auditor's professional standards and related professional obligations with the above subjects.

- **Deposed as an accounting standards expert in a State Supreme Court Action (N.Y. Sup. Ct., Index No. 654977/2022).** Retained to offer expert opinions and testimony relating to capital expenditure reserves and the associated reporting and disclosure of restricted cash balances on financial statements filed with the United States Securities and Exchange Commission. Further testified as to the responsibilities and activities of auditors as they relate to the reporting and disclosure of restricted cash balances.
- **Deposed as a financial reporting and audit expert in a District Court Action (N.D. Ill, Case No. 19-CV-6473).** Retained as an expert covering the roles and responsibilities of management and the auditor relating to the financial statement audit. Further testified as to the purpose of an audit of financial statements. Also testified about the auditor's professional standards and related professional obligations with regard to when an auditor discovers newly identified information not known to them at the time of the audit.

Speaking Engagements

- Ankura Podcast – “High Stakes Investigations: Spotlight on Auditors” (May 7, 2025)
- Securities Docket – Securities Enforcement Forum Central 2024: “Financial Disclosure and Accounting Fraud” (September 24, 2024)
- American Law Institute – Accountant Liability Conference 2023: “Facing Two (or More) Fronts: Responding to Parallel Investigations” (May 17, 2024)
- University of Texas School of Law Government Enforcement Institute: “SEC Developments and Current Priorities” (September 29, 2023)
- Securities Docket – Securities Enforcement Forum Central 2023: “Financial Disclosure and Accounting Fraud” (September 19, 2023)
- American Law Institute – Accountant Liability Conference 2023: “Quality Control and Other Emerging Regulatory Issues” (May 5, 2023)
- American Law Institute – Accountant Liability Conference 2022: “Developing and Executing an Effective Expert Strategy” (June 10, 2022)
- Securities Docket – Securities Enforcement Forum 2022: “Financial Disclosure and Accounting Fraud” (November 15, 2022)
- The Texas Lawbook: “Key Developments in SEC Enforcement” (April 3, 2022)
- Securities Docket – Securities Enforcement Forum 2021: “Financial Disclosure and Accounting Fraud” (November 4, 2021)
- Securities Docket – Webcast: “Securities Enforcement: A Look Back at 2021, and What to Expect in 2022” (February 1, 2021)
- Securities Docket – Webcast: “Securities Enforcement: A Look Back at 2020, and What to Expect in 2021” (January 12, 2021)
- Securities Docket – Securities Enforcement Forum 2020: “Financial Disclosure and Accounting Fraud” (November 4, 2021)
- University of Texas School of Law Government Enforcement Institute: “SEC Developments and Current Priorities” (October 1, 2021)
- Lemme Best Practices (Virtual) – “*The Regulatory Environment for Firms in the Biden Era*” (September 9, 2021)
- Securities Docket – Webcast: “SEC Enforcement: Current Developments and What’s Ahead for 2019” (March 1, 2019)
- A Look Back at 2020, and What to Expect in 2021” (January 12, 2021)
- Securities Docket – Webcast: “A Review of SEC Enforcement in 2017 and What’s Ahead for 2018” (January 18, 2018)
- Securities Docket – Securities Enforcement Forum West: “Financial and Accounting Fraud” (May 10, 2018)
- Securities Docket – Securities Enforcement Forum 2021: “Financial Disclosure and Accounting Fraud” (October 26, 2017)
- Securities Docket – Webcast: “Today and Tomorrow – Key Developments for 2016 and Expectations for 2017” (January 17, 2017)
- A Review of SEC Enforcement in 2017 and What’s Ahead for 2018” (January 18, 2018)
- AICPA Forensic and Valuation Services Conference: “Don’t Get Left Behind: New Revenue GAAP Will change All Financial Statements” (November 7, 2018)
- AICPA Forensic and Valuation Services Conference: “Forensic Accounting Evidence – Know Your Audience and the Expectations” (November 7, 2018)
- AICPA Forensic and Valuation Services Conference: “Fraud Scheme: Exposed Behind the Curtain” (November 13, 2017)

Publications

- Accounting Today: “The Regulatory Forecast: Less, and lighter (February 18, 2025)
- Law360: “A New PCAOB Board Sets New Enforcement Practices” (January 27, 2023)
- Bloomberg Tax: “Watergate Era Audit Fraud Rules Face Post- Wells Fargo Revamp” (October 24, 2022)
- Law360: “Expect More Robust PCAOB Enforcement This Year” (February 9, 2022)
- Ankura: “SPACS and Warrant Accounting” (April 20, 2021)
- Law360: “PCAOB Enforcement Activity Likely to Increase in 2021” (February 1, 2021)

Exhibit 2

Expert Report of Steven Richards

Exhibit 2 – Documents and Materials Considered

In addition to the documents cited throughout my report, I considered the following documents in preparing my report:

Accounting Guidance, Authoritative Literature, SEC Guidance and Professional Standards

- AICPA Code of Conduct
- AICPA Statement on Standards for Forensic Services No. 1
- FASB ASC Topic 450-20, Loss Contingencies
- FASB ASC Topic 855, Subsequent Events
- AU Section 560 Subsequent Events
- AU Section 561 Subsequent Discovery of Facts Existing at the Date of the Auditor's Report
- General Rules and Regulations, Part 230.405, of Securities Act of 1933
- Sarbanes Oxley Act of 2002, Section 404: Management Assessment of Internal Controls
- Sarbanes Oxley Act of 2002, Section 302: Corporate Responsibility for Financial Reports
- SEC Answers, Form 8-K
- SEC Commission, General Rules of Regulation FD
- SEC Commission Rule, Commission Guidance Regarding Management's Discussion and Analysis of Financial Condition and Results of Operations, December 29, 2003
- SEC Commission Rule, Disclosure in Management's Discussion and Analysis About Off-Balance Sheet Arrangements and Aggregate Contractual Obligations, February 5, 2003
- SEC Notice, Commission Statement About Management's Discussion and Analysis of Financial Condition and Results of Operations, January 25, 2002.
- SEC Final Rule, Selective Disclosure and Insider Trading, Regulation FD
- SEC Final Rule, Management's Discussion and Analysis, Selected Financial Data, and Supplementary Financial Information
- SEC Final Rule, Disclosure in Management's Discussion and Analysis About Off-Balance Sheet Arrangements and Aggregate Contractual Obligations
- SEC Financial Reporting Manual, Topic 1 Registrant's Financial Statements,
- SEC Financial Reporting Manual, Topic 9 SEC Financial Reporting Manual, Topic 9, Management's Discussion and Analysis of Financial Position and Results of Operations (MD&A), 9100 MD&A Objectives
- SEC Form Summary, Form 8-K
- SEC Frequently Asked Questions, Form 8-K
- SEC General Instructions, Form 8-K
- SEC General Instructions, Form 10-K
- SEC General Instructions, Form 10-Q
- SEC Investor Bulletin, How to Read an 8-K, May 2012
- SEC Investor Bulletin, How to Read a 10-K/10-Q, January 25, 2021
- SEC Investor Bulletin, How to Read a 10-K, September 11, 2011
- SEC Interpretive Rule, Management's Discussion and Analysis of Financial Condition and Results of Operations; Certain Investment Company Disclosures, May 18, 1989.
- SEC Questions and Answers of General Applicability, Exchange Act Form 8-K, Compliance and Disclosure Interpretations, June 24, 2024
- SEC Questions and Answers of General Applicability, Exchange Act Form 8-K, Compliance and Disclosure Interpretations, November 23, 2004
- SEC Consolidated Compliance and Disclosure Interpretations
- SEC Staff Accounting Bulletin: No. 99 – Materiality

Expert Report of Steven Richards

Exhibit 2 – Documents and Materials Considered

- 17 CFR § 229.103 - (Item 103) Risk factors, Regulation S-K.
- 17 CFR § 229.105 - (Item 105) Risk factors, Regulation S-K.
- 17 CFR § 229.307 – (Item 307) Disclosure controls and procedures.
- 17 CFR § 229.308 - (Item 308) Internal control over financial reporting.
- 17 CFR § 230.405 – Definitions of terms.
- 17 CFR § 240.13a-15- Controls and procedures
- 17 CFR Part 243.100, Regulation Fair Disclosure.

Expert Reports

- Expert Report of Dr. Patrick F. Kennedy dated August 8, 2025
- Expert Report of Eric E. Posner dated August 8, 2025

Qualcomm SEC Filings - 8-K

- Qualcomm, Inc. Form 8-K, March 12, 2018
- Qualcomm, Inc. Form 8-K, January 12, 2021
- Qualcomm, Inc. Form 8-K, November 06, 2024

Qualcomm SEC Filings - 10-K

- Qualcomm Inc., Form 10-K, for the year ended September 24, 2023
- Qualcomm Inc., Form 10-K, for the year ended September 29, 2024

Qualcomm SEC Filings - 10-Q

- Qualcomm, Inc. Form 10-Q for quarter ended September 25, 2022
- Qualcomm, Inc. Form 10-Q for quarter ended December 25, 2022
- Qualcomm, Inc. Form 10-Q for quarter ended March 26, 2023
- Qualcomm, Inc. Form 10-Q for quarter ended June 25, 2023
- Qualcomm, Inc. Form 10-Q for quarter ended September 24, 2023
- Qualcomm, Inc. Form 10-Q for quarter ended December 24, 2023
- Qualcomm, Inc. Form 10-Q for quarter ended March 24, 2024
- Qualcomm, Inc. Form 10-Q for quarter ended June 23, 2024
- Qualcomm, Inc. Form 10-Q for quarter ended December 29, 2024
- Qualcomm, Inc. Form 10-Q for quarter ended March 30, 2025
- Qualcomm, Inc. Form 10-Q for quarter ended June 29, 2025

Other SEC Filings

- Arm Holdings PLC, Form 20-F, for the year ended March 31, 2025
- Arm Holdings PLC, Form 6-K, November 2024
- Qualcomm Inc., Form 8-K, Exhibit 99.1

Depositions and Related Exhibits

- Deposition of Cristiano Amon dated July 03, 2025, and Exhibits (1-17)

Expert Report of Steven Richards

Exhibit 2 – Documents and Materials Considered

- Deposition of Ann Chaplin dated July 11, 2025, and Exhibits (1-25)
- Deposition of Spencer Collins dated June 30, 2025, and Exhibits (75-92)
- Deposition of Rene Haas dated July 07, 2025, and Exhibits (1-15)
- Deposition of Pavankumar Mulabagal dated July 01, 2025, and Exhibits (1-14)
- Deposition of Kenneth Siegel dated July 04, 2025, and Exhibits (1-14)
- Deposition of Jonathan Weiser dated July 11, 2025, and Exhibits (1-8)

Complaints and Court Filings

- Complaint, Arm LTD v. Qualcomm Inc., et.al , August 31, 2022
- Arm Ltd. v. Qualcomm Inc. et al., No. 22-1146 (MN), D.I. 1, p. 1
- Arm Ltd. v. Qualcomm Inc. et al., No. 22-1146 (MN), D.I. 1
- Arm Ltd. v. Qualcomm Inc. et al., No. 22-1146 (MN), D.I. 12
- Arm Ltd. v. Qualcomm Inc. et al., No. 22-1146 (MN), D.I. 18.
- Arm Ltd. v. Qualcomm Inc. et al., No. 22-1146 (MN), D.I. 306.
- Arm Ltd. v. Qualcomm Inc. et al., No. 22-1146 (MN) Plaintiff Arm Ltd.'s Answer and Affirmative Defenses to Defendants Qualcomm Inc., Qualcomm Technologies, Inc., and Nuvia, Inc.'s Amended Counterclaim
- First Amended Complaint, Qualcomm Inc. And Qualcomm Technologies Inc. v. Arm Holdings PLC, December 16, 2024
- Second Amended Complaint, Qualcomm Inc. And Qualcomm Technologies Inc. v. Arm Holdings PLC, June 03, 2025
- Redacted Second Amended Complaint, Qualcomm Inc. And Qualcomm Technologies Inc. v. Arm Holdings PLC, June 03, 2025 (Filed 06/09/25).

Transcripts

- Qualcomm Inc Q1 2024 Earnings Call Transcript, January 31, 2024
- Qualcomm Inc Q2 2024 Earnings Call Transcript, May 01, 2024
- Qualcomm Inc Q3 2024 Earnings Call Transcript, July 31, 2024
- Qualcomm Inc Q4 2024 Earnings Call Transcript, November 06, 2024
- Qualcomm Inc Q1 2025 Earnings Call Transcript, February 05, 2025
- Qualcomm Inc Q2 2025 Earnings Call Transcript, April 30, 2025
- Qualcomm Inc Q3 2025 Earnings Call Transcript, July 30, 2025
- Qualcomm Deutsche Bank Technology Conference, August 29, 2024
- Qualcomm Investor Day 2024 Transcript, November 19, 2024
- Qualcomm Inc UBS Global Tech Conference Transcript, December 04, 2024
- Qualcomm at Nasdaq London Investor Conference, June 11, 2025
- Qualcomm Inc at JPMorgan Global Technology, Media and Communications Conference, May 14, 2025
- Qualcomm Inc Annual Shareholders Meeting, March 18, 2025
- Qualcomm Inc at Bernstein Strategic Decisions Conference, May 28, 2025
- Bernstein's 40th Annual Strategic Decisions Conference, May 29, 2024
- Bernstein Annual Strategic Decisions Conference, May 29, 2024

Other

- Breach Letter, October 22, 2024

Expert Report of Steven Richards
Exhibit 2 – Documents and Materials Considered

- Bloomberg, “Arm to Scrap Qualcomm Chip Design License in Feud Escalation”, October 22, 2024
- Bloomberg, “Arm to Scrap Qualcomm Chip Design License in Feud Escalation”, October 23, 2024
- NASDAQ, What Is an Earnings Call? Here’s What New Investors Should Know, April 27, 2024
- Investopedia, Earnings Conference Call: What it is, How it Works, September 11, 2022
- Qualcomm Press Announcement, March 15, 2021.
- Qualcomm Press Announcement, December 20, 2024.
- Arm Holdings PLC Financial Statements for year ended as of March 31, 2024
- SEC Introduction to Investing Glossary, Form 10-K.
- SEC Introduction to Investing Glossary, Form 10-Q.
- SEC Speech, Disclosure Effectiveness: Remarks Before the American Bar Association Business Law Section Spring Meeting, April 11, 2014
- Regulation Fair Disclosure and New Insider Trading Rules Fact Sheet, August 10, 2000
- SEC Statement, Assessing Materiality: Focusing on the Reasonable Investor When Evaluating Errors, March 09, 2022
- SEC Search, Qualcomm Filings Between January 1, 2024 and August 24, 2025
- SEC Speech, Applying a Principles-Based Approach to Disclosing Complex, Uncertain and Evolving Risks, March 15, 2019.
- SEC.gov EDGAR Full Text Search
- SEC.gov EDGAR Qualcomm 10-K and 10-Q Filing Dates

EXHIBIT 13

HIGHLY CONFIDENTIAL - ATTORNEYS EYES ONLY

Page 1

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

- - - - -

QUALCOMM INCORPORATED, a)
Delaware corporation;)
QUALCOMM TECHNOLOGIES,)
INC., a Delaware)
corporation,) C.A. No. 24-490-MN
Plaintiffs,)
vs.)
ARM HOLDINGS PLC, f/k/a ARM)
LTD., a UK corporation,)
Defendant.)

HIGHLY CONFIDENTIAL - ATTORNEYS EYES ONLY

VIDEO RECORDED DEPOSITION OF STEVEN RICHARDS

Thursday, October 2, 2025, 8:08 a.m.

Paul Weiss Rifkind Wharton & Garrison LLP
2001 K Street, NW
Washington, DC

Reported By: Marjorie Peters, FAPR, RMR, CRR, RSA

HIGHLY CONFIDENTIAL - ATTORNEYS EYES ONLY

<p style="text-align: right;">Page 82</p> <p>1 A. I'm not offering an opinion about that, 2 either. 3 Q. So is it correct that the expert 4 opinions in your report are not contradicting or 5 rebutting this particular paragraph? 6 A. Oh, I would disagree with that. I think 7 both in Mr. Kennedy and Mr. Posner's reports, when 8 they're looking at harm, what I'm focused on is the 9 fact that the Notice Letter from October 22nd -- and 10 just to be clear, everybody knows what I'm talking 11 about, Notice Letter, October 22nd, okay -- was 12 required to be disclosed, and Qualcomm determined it 13 was required to be disclosed, and disclosed it on 14 November 6th. 15 Q. Okay, but I'm talking about this 16 specific paragraph. 17 A. Mm-hmm. 18 Q. You agree, Dr. Kennedy is describing 19 Qualcomm's allegations in the Complaint. This 20 paragraph makes no reference to SEC disclosures at 21 all; right? 22 A. It makes reference to the Notice Letter</p>	<p style="text-align: right;">Page 84</p> <p>1 Q. You just said -- 2 A. Mm-hmm. 3 Q. -- that you knew that Qualcomm 4 determined that the Notice Letter was required to be 5 disclosed because it was laid out in Footnote 7, and 6 there's a policy in Footnote 1 of the financial 7 statements. 8 A. Yeah. So Footnote 1 outlines what 9 Qualcomm's -- so Footnote 1, to be clear, is 10 significant accounting policies. That's Footnote 1 11 of the financial statements. And I'm talking about 12 the 10-K filed on March -- or on November 6th of 13 '24. Right. But you can go back and look at this 14 disclosure; it's in other filings also. 15 But I'm talking about Footnote 1 16 outlines in their significant accounting policies 17 contingencies, legal proceedings. And so there's a 18 note that describes their accounting policy relating 19 to that, which is consistent with ASC 450-20-50, and 20 other sections with -- inside there. 21 And then they disclose under that 22 policy items in Footnote 7. So Footnote 7 is where</p>
<p style="text-align: right;">Page 83</p> <p>1 was leaked, right. And so I think what I'm trying 2 to say is, well, the Notice Letter was required to 3 be disclosed. 4 So I think it's trying to put "the 5 Notice Letter was leaked" in some context around its 6 public obligation to be disclosed. 7 Q. How do you know that Qualcomm determined 8 that the Notice Letter was required to be disclosed? 9 A. Because they lay out their policy in 10 Footnote 1 of the financial statements, and then 11 disclosed it in Footnote 7. And that Footnote 1 and 12 Footnote 7 are both subject to review by an external 13 auditor, who concurred with their conclusion. 14 So that's how I know they determined 15 it needed to be disclosed. 16 Q. So your opinion is based on the fact 17 that the Notice Letter was included in Qualcomm's 18 SEC filings? 19 A. I'm sorry. What part of my opinion? 20 Q. What you just said. 21 A. I apologize. I'm just not following the 22 question now.</p>	<p style="text-align: right;">Page 85</p> <p>1 you will see the disclosure around the Notice 2 Letter. 3 Both that disclosures in Footnote 7, 4 as well as the policy disclosed in Footnote 1, were 5 subject to audit procedures. The auditor did not 6 find an exception, a material exception, otherwise 7 they would have been required to flag it, and it 8 wouldn't be in there with a clean opinion. 9 Q. Is what you're describing here what you 10 lay out in Paragraph 21 of your report? 11 A. Yeah. Just give me one second. 12 Obviously, I wasn't efficient with words. 13 Yeah. I think, generally, yes. 14 (Richards Exhibit 2, Qualcomm 10-K, September 29, 15 2024, was marked for identification.) 16 Q. So I think you've just been handed what 17 is marked as Richards Exhibit 2. That is Qualcomm's 18 2024 10-K; right? 19 A. Yes. That's what it looks like. 20 Q. The information that you've just recited 21 that is included in Paragraph 21 is not included in 22 the basis of your opinion that starts at page 19;</p>

22 (Pages 82 - 85)

HIGHLY CONFIDENTIAL - ATTORNEYS EYES ONLY

<p style="text-align: right;">Page 106</p> <p>1 Q. But you've just testified that you 2 looked at the policy statement, that sentence that 3 we read. 4 A. Mm-hmm. 5 Q. Then you looked at the disclosures in 6 Note 7. 7 And your opinion is that everything 8 that's disclosed in Note 7 relates to a material 9 loss incurred by Qualcomm because of that sentence 10 that we read earlier as a policy statement? 11 A. No, I think you're -- that's not what I 12 said, all right. So I think what I said is Qualcomm 13 made those judgments, right, and then I evaluated 14 the judgment as it was relating to the Notice 15 Letter. 16 All right. So Qualcomm made 17 judgments based on the policy it outlined around the 18 other cases that are identified in Note 7, right. I 19 did not independently go look at each one of those 20 cases, right. 21 So I took a look at what Qualcomm's 22 policy was. Qualcomm's the party that determined</p>	<p style="text-align: right;">Page 108</p> <p>1 relative to that judgment, they believe are 2 reasonably possible of having a material loss, and 3 that was all subject to audit by [REDACTED] [REDACTED] I believe. 5 So unless they misrepresented it to 6 [REDACTED], and are making an active misrepresentation 7 here, I think that's what they're saying it is. 8 And I evaluated relative to the 9 October 22nd Notice Letter was, you know, that, you 10 know, an appropriate judgment. Based on everything 11 that I've been able to review, it looks like an 12 appropriate judgment to me. 13 Q. There's nothing in that sentence that we 14 read earlier, the policy sentence, that says that 15 Qualcomm cannot disclose or include information in 16 this section of Note 7 that is not related to a 17 material loss; correct? 18 A. I'm sorry. Can you just give me the 19 question again, please. 20 Q. Yeah. 21 There's nothing in that policy 22 statement that we read that states that Qualcomm</p>
<p style="text-align: right;">Page 107</p> <p>1 that it was a possible -- reasonably possible, the 2 material loss. And I looked relative to the -- my 3 understanding of the facts, and agree that relative 4 to the Notice Letter it was required to be 5 disclosed. 6 Q. Did you speak to anyone at Qualcomm when 7 preparing your report? 8 A. I did not. 9 Q. Did you speak to Qualcomm's auditors 10 when preparing your report? 11 A. I did not. 12 Q. So you don't actually know what 13 determination Qualcomm made; right? 14 A. Not true. It's right in the document 15 itself. Unless Qualcomm made a misrepresentation to 16 the public, and the auditor confirmed the 17 misrepresentation, which I find highly unlikely. 18 Q. Well, you're interpreting Qualcomm's 19 disclosure in a particular manner; right? 20 A. Well, their Note 1 outlines their policy 21 on which they tell the public as to how am I making 22 this judgment. Then they include the cases that,</p>	<p style="text-align: right;">Page 109</p> <p>1 cannot or will not include information in this 2 section of Note 7 that's not related to a material 3 loss; right? 4 A. I don't believe that says that in 5 Note 1, but you're supposed to -- just generally 6 speaking, in your filings to investors -- I mean, 7 that's the purpose of the document, you're supposed 8 to be conveying information you think is important 9 for them to see the business through the eyes of 10 management and those most material items. 11 I don't -- in fact, the Commission 12 has gone under several projects to try to eliminate 13 what they believe to be a less valuable disclosure. 14 Q. But you can include information in this 15 section that is not related to a material loss; 16 right? 17 MS. POHL: Object to form. 18 A. I think if somebody's including 19 something in a disclosure of this nature, and 20 outlined the definition that they did, I don't know 21 why you would include information that was not 22 material to investors.</p>

28 (Pages 106 - 109)

HIGHLY CONFIDENTIAL - ATTORNEYS EYES ONLY

<p style="text-align: right;">Page 118</p> <p>1 wasn't thinking it's filing a suit to lose, right. 2 The second one is a Notice Letter 3 talking about a breach of the ALA, and the related 4 right to terminate in 60 days. That sounds a lot 5 more like that that could be a negative consequence 6 to Qualcomm, and have additional, potential losses. 7 That looks to me like why they put that disclosure 8 in there, because it was a reasonable possibility of 9 a material loss. 10 MS. POHL: We have been going for 11 actually about another 20 minutes. Steve, do you 12 want to take your break now? 13 THE WITNESS: Yeah. 14 MR. BRALY: Yeah. We can take a 15 break. 16 THE VIDEOGRAPHER: The time is 17 10:29 a.m. We're going off the record. 18 (RECESS, 10:29 a.m. - 10:39 a.m.) 19 THE VIDEOGRAPHER: The time is 20 10:39 a.m. We're going back on the record. 21 Please proceed, counsel. 22 BY MR. BRALY:</p>	<p style="text-align: right;">Page 120</p> <p>1 is yes. 2 Q. All right. Thank you. 3 You're also -- you're not offering 4 an opinion as to the monetary amount of damages that 5 Qualcomm alleges it suffered as a result of the leak 6 of the Notice Letter; right? 7 A. That's correct. 8 Q. You're not offering an opinion on 9 potential harm that Qualcomm may or may not have 10 suffered if the letter had not been leaked to 11 Bloomberg; right? 12 A. Could you just give it to me again. 13 Q. Yeah. 14 You're not offering an opinion as to 15 what the potential harm could have been to Qualcomm 16 if the letter had not been leaked to Bloomberg; 17 right? 18 A. No. 19 Q. You didn't do any analysis of harm 20 between the original leak of the letter to 21 Bloomberg, and then the disclosure of the letter in 22 Qualcomm's SEC filing; right?</p>
<p style="text-align: right;">Page 119</p> <p>1 Q. If we look at Paragraph 22 -- 2 A. Of my report? 3 Q. Of your report, yes. You can put the 4 10-K to the side for now. 5 A. Okay. 6 Q. This is a summary of your second 7 opinion; right? You include your second opinion, 8 and then it's a summary of the opinion; right? 9 A. Yes. 10 Q. You're not offering an opinion in this 11 case as to whether Qualcomm suffered harm from the 12 leak of the Notice Letter; right? 13 A. That's correct. 14 Q. And your opinion is limited to whether 15 the harm alleged by Qualcomm as resulting from the 16 publication of the Bloomberg article was material to 17 Qualcomm; right? 18 A. Material to Qualcomm as related to being 19 disclosed through a filing or some other interaction 20 with an investor. 21 Q. Okay. 22 A. So I think the answer to your question</p>	<p style="text-align: right;">Page 121</p> <p>1 A. That's correct. I didn't do any 2 analysis of harm. 3 Q. On page 11 of your report, you have a 4 heading for Public Company Disclosure Obligations. 5 A. I see it, yes. 6 Q. The first subheading is Definition of 7 Materiality in Public Company Disclosure 8 Obligations; right? 9 A. Yes, it is. 10 Q. Are you an expert in materiality? 11 A. I think in my experience, I have dealt 12 with the concept of materiality extensively. 13 Q. Okay. 14 So would you consider yourself an 15 expert in materiality, or no? It was not one of the 16 areas of expertise that you listed earlier. 17 A. I have dealt with materiality throughout 18 my career extensively as it relates to accounting, 19 auditing, disclosure. 20 Q. Okay. 21 The first citation that you have 22 here is to SEC Staff Accounting Bulletin Number 99;</p>

31 (Pages 118 - 121)

HIGHLY CONFIDENTIAL - ATTORNEYS EYES ONLY

<p style="text-align: right;">Page 126</p> <p>1 Q. You next quote in Paragraph 36(b) the 2 SEC's Acting Chief Accountant. 3 You state that, he's referenced the 4 Supreme Court precedent which held that a fact is 5 material if there is "a substantial likelihood that 6 the... fact would have been viewed by the reasonable 7 investor as having significantly altered the 'total 8 mix' of information made available"; right? 9 A. That's what the quote says. 10 Q. Which Supreme Court precedent are you 11 referring to? 12 A. Maybe the ease for not marking another 13 exhibit -- well, you're welcome to mark it, but if 14 you actually just look at footnote 4 of SAB 99. 15 Q. Footnote 4. 16 A. Yeah. So the SAB does have the Supreme 17 Court, the TSC case, articulated in it. It's one of 18 the pillars of the foundation of SAB 99, is that the 19 guidance is driven around the Supreme Court's case. 20 That's why it's footnoted there. So TSC Industries 21 versus Northway, if that's the question you're 22 asking.</p>	<p style="text-align: right;">Page 128</p> <p>1 authoritative. 2 I think what the SAB 99, this speech 3 and other documents, are trying to do is the 4 Commission has to apply that in a litany of 5 circumstances that are outside of the specific fact 6 pattern that are in the TSC case. 7 So I think they're trying to take 8 the guidance -- I can tell you that's what they're 9 trying to do because that's what the Office of Chief 10 Accountant always said when I was there, is they try 11 to take that guidance and apply it across a variety 12 of different circumstances. 13 So that's really meant to be 14 interpretive guidance from what the Supreme Court 15 precedent is. 16 Q. In particular, the quote that you have 17 included in your report that, a fact is material if 18 there is "a substantial likelihood that the... fact 19 would have been viewed by the reasonable investor as 20 having significantly altered the 'total mix' of 21 information made available." 22 Do you view that as an authoritative</p>
<p style="text-align: right;">Page 127</p> <p>1 Q. Okay. 2 Just for clarity, I'll mark 3 Exhibit 4. These are Mr. Munter's remarks that you 4 are quoting in 36(b). 5 (Richards Exhibit 4, SEC Statement, 3.9.2022, 6 "Assessing Materiality..." ARMQC_02796708-716, was 7 marked for identification.) 8 Q. If you go to page 8, footnote 4, turns 9 out it's the same footnote as in SAB 99. Mr. Munter 10 was also quoting TSC Industries; right? 11 A. I'm sorry. Give me one sec. 12 Footnote 4, yeah. It looks like it's the same 13 footnote. 14 Q. It also says, "See Basic, Inc. v 15 Levinson"; right? 16 A. I'm sorry. Yes. Yeah. I see that. It 17 does. 18 Q. Do you believe that the standard 19 articulated in TSC Industries for materiality is 20 authoritative? 21 A. So the Supreme Court's decision around 22 materiality as articulated in the TSC case, it is</p>	<p style="text-align: right;">Page 129</p> <p>1 standard regarding materiality? 2 A. Yeah. 3 I think that's -- I think that's 4 what the Supreme Court was saying, and I think 5 that's what all of the Commission's guidance is 6 trying to get at. 7 Q. What does "substantial likelihood" mean? 8 MS. POHL: Object to form. 9 A. Well, it's -- you just sort of break it 10 down, and there's, it has no bearing or has absolute 11 bearing. I think substantial likelihood is that it 12 is, you know -- I'm trying to not answer in such a 13 way that's like, you know, a legal determination. 14 It's -- the way this is practically 15 implemented is by saying that it is -- it would 16 likely. You know, it would likely affect a judgment 17 of -- a user of the financial information when they 18 look at everything they know in the total mix of 19 information. 20 Q. I'm just asking for your opinion and 21 interpretation of that phrase as used in 22 TSC Industries.</p>

33 (Pages 126 - 129)

HIGHLY CONFIDENTIAL - ATTORNEYS EYES ONLY

<p style="text-align: right;">Page 130</p> <p>1 So your opinion is that substantial 2 likelihood, as used in TSC Industries, means that it 3 would likely affect a judgment of a user of the 4 financial information? 5 MS. POHL: Object to form. 6 A. Yeah. 7 I mean, I can tell you, having sat 8 in the chairs at the SEC, in their Office of Chief 9 Accountant, and discussed materiality with 10 registrants and other members of staff, including 11 the chief accountants at the time. They're trying 12 to make sure that information that could bear on an 13 investment decision, if it would -- if it would be 14 material relative to investment decision, that 15 that's how they considered, like, is it material or 16 not. 17 I don't know how else to describe 18 substantial likelihood. I've given, like, it 19 would -- you know, would it affect an investor's 20 decision. 21 Q. That's the definition that you would 22 use. Would it affect an investor's decision?</p>	<p style="text-align: right;">Page 132</p> <p>1 MS. POHL: Object to form. 2 Also, just to be really clear, I 3 think I objected to the previous question, too. I 4 just don't see it on the realtime. So just for the 5 record, I also objected to that one. Sorry, Jake. 6 Go ahead. 7 A. Can you just give me the question. 8 Q. Sure. 9 A. I'm sorry. 10 Q. How did you apply the standard from 11 TSC Industries in reaching the opinion in your 12 report? 13 A. Well, Qualcomm applied the standard 14 relative to the October 22nd Notice Letter, as we've 15 talked about before, when they outlined their policy 16 in Footnote 1, and then make the disclosure, based 17 on the fact that it was reasonably possible risk of 18 a material loss. 19 Q. So you personally did not apply the 20 standard articulated in TSC Industries in forming 21 your opinion as articulated in your report; correct? 22 A. Qualcomm determined it was material.</p>
<p style="text-align: right;">Page 131</p> <p>1 A. That's literally something I heard from 2 one of the deputy chief accountants in the way they 3 talked about it, but I would agree with that 4 definition. 5 Q. What do you think "'total mix' of 6 information made available" means within the 7 standard articulated in TSC Industries? 8 MS POHL: Object to form. 9 A. So all the different sources of 10 information available to the investor to make that 11 determination of an investment or not. 12 So it could be filings. It could be 13 investor calls. It can be information on the 14 website. It can be within that total mix of 15 information. 16 There's not a single piece of 17 information. Like, even within this 10-K. I mean, 18 there's a reason why it's a couple of hundred pages 19 long. 20 Q. How did you apply this standard from 21 TSC Industries in reaching the opinion in your 22 report?</p>	<p style="text-align: right;">Page 133</p> <p>1 [REDACTED] 2 [REDACTED] 3 [REDACTED] 4 [REDACTED] 5 [REDACTED] 6 Q. So you looked at Qualcomm's disclosure? 7 A. Mm-hmm. 8 Q. But did you do any separate evaluation 9 or analysis under the TSC Industries standard? 10 A. I got the same answer. 11 I mean, I -- Qualcomm made a 12 determination it was material, and disclosed it. 13 And everything that I saw that would bear on that 14 view of materiality was consistent with Qualcomm's 15 judgment, that it was material and required to be 16 disclosed. 17 Q. So you reviewed the total mix of 18 information made available, and performed an 19 analysis as to whether there was a substantial 20 likelihood that the fact would have been viewed by 21 the reasonable investor as having significantly 22 altered the total mix of information made available?</p>

34 (Pages 130 - 133)

HIGHLY CONFIDENTIAL - ATTORNEYS EYES ONLY

<p style="text-align: right;">Page 134</p> <p>1 A. I've already answered this question. So</p> <p>2 you can just read back my last answer.</p> <p>3 But I didn't have -- well, you can</p> <p>4 look at the documents considered, right. So there's</p> <p>5 clearly other information that exists in the</p> <p>6 universe relative to Qualcomm, generally, right,</p> <p>7 that I certainly didn't look at. Okay.</p> <p>8 But relative to what I was looking</p> <p>9 at, the October 22nd Notice Letter, I evaluated, as</p> <p>10 we've talked about extensively, what was the policy</p> <p>11 that they applied, as articulated to the public, was</p> <p>12 Note 1. We've been through that quite a bit.</p> <p>13 And that they made the</p> <p>14 determination, because it met those requirements</p> <p>15 that they outlined in Note 1, and then [REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>20 Q. I don't think that answered my question.</p> <p>21 You said that you looked at</p> <p>22 Qualcomm's policy statement, which we've done.</p>	<p style="text-align: right;">Page 136</p> <p>[REDACTED]</p> <p>[REDACTED] and Qualcomm investor</p> <p>4 calls following the disclosure of the letter in the</p> <p>5 November 6, 2024, 10-K.</p> <p>6 Is it your testimony that, apart</p> <p>7 from that, you did no independent analysis under the</p> <p>8 TSC Industries standard?</p> <p>9 A. I think what you're asking me is, did I</p> <p>10 make a legal conclusion, and the answer is no.</p> <p>11 Q. You've assisted companies -- you</p> <p>12 testified to earlier, you've assisted companies in</p> <p>13 preparing their SEC disclosures; right?</p> <p>14 A. Correct.</p> <p>15 Q. Did that involve making a legal</p> <p>16 conclusion?</p> <p>17 A. I was assisting them on their evaluation</p> <p>18 of the facts and circumstances relative to whatever</p> <p>19 the disclosure requirement was.</p> <p>20 Q. You say that you --</p> <p>21 A. The company made the determination as to</p> <p>22 what they were going to disclose. I was not an</p>
<p style="text-align: right;">Page 135</p> <p>1 A. Mm-hmm.</p> <p>2 Q. You looked at the disclosure in Note 7,</p> <p>3 which we've also looked at. And then you say you</p> <p>4 evaluated what the policy was.</p> <p>5 A. Which we've also talked about.</p> <p>6 Q. Right.</p> <p>7 Did you do any separate analysis of</p> <p>8 the total mix of information or of the information</p> <p>9 in the Notice Letter to determine whether that</p> <p>10 information created a substantial likelihood that</p> <p>11 the fact would have been viewed by the reasonable</p> <p>12 investor as having significantly altered the total</p> <p>13 mix of information made available?</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p>	<p style="text-align: right;">Page 137</p> <p>1 officer of the company.</p> <p>2 Q. You say that you have extensive</p> <p>3 experience looking at materiality determinations;</p> <p>4 right?</p> <p>5 A. 100 percent.</p> <p>6 Q. Does that involve a legal conclusion?</p> <p>7 A. I think you can have extensive</p> <p>8 experience when you deal with it nearly every day.</p> <p>9 Dealing with any audit judgment as to, is that</p> <p>10 relating to a material assertion, dealing with, is</p> <p>11 there an error in the financial statements. All</p> <p>12 those things relate to materiality, of which, you</p> <p>13 know, materiality is also a function of, you know,</p> <p>14 the accounting expertise to understand how to apply</p> <p>15 the rule set, what's it mean.</p> <p>16 So I think I do have extensive</p> <p>17 expertise to materiality. I'm not making a legal</p> <p>18 judgment.</p> <p>19 Q. Have you ever made a determination as to</p> <p>20 whether something is or is not material?</p> <p>21 A. Maybe the way to clear this up is: I'm</p> <p>22 not the issuer, right. So I'm advising an issuer on</p>

35 (Pages 134 - 137)

HIGHLY CONFIDENTIAL - ATTORNEYS EYES ONLY

<p style="text-align: right;">Page 142</p> <p>1 But if you want to point me to 2 something, I mean, my recollection, it's pretty 3 long, right, so... 4 Q. I don't have it here, but we can print 5 it and look at it later. 6 A. Okay. 7 Q. If Qualcomm's Complaint does not have 8 the word "material," then you're adding the 9 materiality analysis in your opinion; right? 10 A. I'm saying, in my experience, I would 11 have expected, based on what they were saying in the 12 Second Amended Complaint, I would have thought that 13 would have made its way into some disclosure at some 14 point. 15 Q. Right, and that's an analysis of 16 materiality? 17 A. Yeah, based on my experience. 18 Q. It's not a legal conclusion; right? 19 A. It's not a legal conclusion. That's for 20 the trier of fact. 21 Q. Yet, you did not independently apply the 22 materiality standard as articulated in</p>	<p style="text-align: right;">Page 144</p> <p>1 have nothing to do with that Supreme Court case, and 2 that's not factually correct. 3 Q. The reason I'm asking is because in your 4 report at Paragraph 36, which is under a heading, 5 Definition of Materiality and Public Company 6 Disclosure Obligations, you only include three 7 quotes; right? 8 A. I do, of which at least two of the three 9 that we have looked at make reference to the Supreme 10 Court case. 11 Q. Exactly. 12 So that is why I am asking, given 13 that these are the examples you included -- 14 A. Uh-huh. 15 Q. -- and as you have now mentioned, two 16 out of the three are referencing the standard in 17 TSC Industries, whether or not you applied an 18 independent analysis using that standard? 19 A. I don't know what else I'm going to say 20 that I haven't already said. 21 Q. You haven't said yes or no. 22 A. Can you --</p>
<p style="text-align: right;">Page 143</p> <p>1 TSC Industries with respect to the disclosure of the 2 Breach Letter; right? 3 MS. POHL: Object to form. 4 A. I guess I'm struggling with that because 5 the basis of the SAB, the speeches I referred to, 6 the fact that the FASB puts it in their standards, 7 in the ASCs, it's like you keep trying to draw a 8 distinction that there's the Supreme Court, and then 9 there's everything else, and everything else is 10 irrelevant, and that couldn't be farther from the 11 truth, right. 12 So there is definitely the Supreme 13 Court case, and all of the application and 14 implication -- implementation guidance that the 15 Commission and the FASB have adopted is meant to 16 address that concept in the Supreme Court case in a 17 much more broader set of circumstances. That's 18 always been my understanding and my experience with 19 that. 20 So I just -- I don't know if I'm 21 answering your question. Maybe not. I apologize. 22 But that distinction is as if all those other things</p>	<p style="text-align: right;">Page 145</p> <p>1 MS. POHL: Is there a question 2 pending? 3 MR. BRALY: Yes. 4 A. There is, but I don't -- I feel like I 5 have answered it, and I'm not sure exactly what he's 6 asking. 7 So just give me the question again. 8 I'm sorry. 9 Q. Did you -- 10 A. Did I -- 11 Q. -- independently, from Qualcomm, from 12 what you read in Qualcomm's disclosures, analyze the 13 total mix of information made available and the 14 Notice Letter under the standard articulated in 15 TSC Industries? 16 [REDACTED] 17 [REDACTED] 18 [REDACTED] 19 [REDACTED] 20 [REDACTED] 21 [REDACTED] 22 [REDACTED]</p>

37 (Pages 142 - 145)

HIGHLY CONFIDENTIAL - ATTORNEYS EYES ONLY

<p style="text-align: right;">Page 146</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>4 Q. Okay.</p> <p>5 So it sounds like you're saying,</p> <p>6 yes, you did do an independent analysis?</p> <p>7 A. No, because you had several other things</p> <p>8 in the question. That's why I didn't -- I needed to</p> <p>9 frame it up the way I did because you had "in the</p> <p>10 total mix of information."</p> <p>11 So I didn't look at every possible</p> <p>12 document or press release or everything that could</p> <p>13 exist or could have been considered because I don't</p> <p>14 have everything, right. I'm guessing relative to</p> <p>15 this suit, not every possible thing that was --</p> <p>16 existed somewhere was in there.</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED] They disclosed</p>	<p style="text-align: right;">Page 148</p> <p>1 A. Yep.</p> <p>2 It's at least those.</p> <p>3 Q. Anything else?</p> <p>4 A. Looking quick.</p> <p>5 There may be. I didn't see anything</p> <p>6 on a quick review, but there may be others. But I</p> <p>7 didn't see any.</p> <p>8 Q. You can go back and look. I want to</p> <p>9 identify all of the evidence that you looked at that</p> <p>10 you thought was consistent.</p> <p>11 A. Okay. Now, what I didn't -- because</p> <p>12 that's a slightly different question.</p> <p>13 So when you talk about "all the</p> <p>14 evidence," you can't discount the financial</p> <p>15 statements and what they actually disclosed. Right.</p> <p>16 Q. Your testimony was that I looked at</p> <p>17 information that you thought was consistent with the</p> <p>18 determination by Qualcomm.</p> <p>19 I want to know what that evidence</p> <p>20 was that you thought was consistent with the</p> <p>21 determination by Qualcomm.</p> <p>[REDACTED] [REDACTED] because the</p>
<p style="text-align: right;">Page 147</p> <p>1 it.</p> <p>2 I looked at the information that</p> <p>3 I -- that I looked at, I didn't cite it, too, and</p> <p>4 that looked like a consistent determination, an</p> <p>5 appropriate determination by Qualcomm.</p> <p>6 Q. What evidence are you referring to that</p> <p>7 you looked at that you thought was consistent?</p> <p>8 A. It's cited in the report.</p> <p>9 Q. Can you point me to that evidence?</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>12 Q. Can you specifically point me to it in</p> <p>13 your report?</p> <p>14 A. Footnote 15, 16. Footnote 152, 153.</p> <p>15 Paragraph 174.</p> <p>16 Q. Paragraph 174 or footnote 174?</p> <p>17 A. Paragraph.</p> <p>18 Q. Paragraph 174?</p> <p>19 A. Oh, I'm sorry. Did I say -- I</p> <p>20 apologize. 74.</p> <p>21 Q. So that's footnotes 168, 169, 170 and</p> <p>22 171.</p>	<p style="text-align: right;">Page 149</p> <p>1 first part of it -- we've already talked about it --</p> <p>2 which is consistent with Qualcomm's judgment, is</p> <p>3 Note 1 and Note 7. Right.</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>7 Q. Okay.</p> <p>8 A. Among others.</p> <p>9 Q. So Note 1 and Note 7 are not consistent</p> <p>10 with Qualcomm's judgment. That is Qualcomm's</p> <p>11 judgment; right?</p> <p>12 A. Agreed.</p> <p>13 Q. So the evidence that you reviewed that</p> <p>14 you say is consistent with Qualcomm's judgment are</p> <p>15 those footnotes that you just listed; right?</p> <p>16 A. Yes.</p> <p>17 Q. Is there anything else?</p> <p>18 A. So in the -- so let me just ask -- can I</p> <p>19 ask a clarifying question?</p> <p>20 Regarding Opinion 2, I looked at a</p> <p>21 lot of other disclosure and didn't see certain</p> <p>22 things I would have expected to see. I don't think</p>

38 (Pages 146 - 149)

HIGHLY CONFIDENTIAL - ATTORNEYS EYES ONLY

<p>Page 150</p> <p>1 your question is getting at that point. I think</p> <p>2 it's getting at -- is it?</p> <p>3 Q. I'm asking about Opinion 1?</p> <p>4 A. Okay.</p> <p>5 Q. Other than the footnotes that you've</p> <p>6 just listed, what other evidence did you look at</p> <p>7 that you said was consistent with Qualcomm's</p> <p>8 determination?</p> <p>9 [REDACTED]</p> <p>10 [REDACTED]</p> <p>11 [REDACTED]</p> <p>12 [REDACTED]</p> <p>13 [REDACTED]</p> <p>14 [REDACTED]</p> <p>15 But I thought I tried to cite to the</p> <p>16 ones that were most on-point.</p> <p>17 Q. When I asked you earlier --</p> <p>18 A. Mm-hmm.</p> <p>19 Q. -- about your report being complete, you</p> <p>20 said that it was; right?</p> <p>21 A. Yeah. I agree. It is.</p> <p>22 Q. Now you're saying it doesn't include</p>	<p>Page 152</p> <p>1 Qualcomm made, in your opinion, solely consisted of</p> <p>2 what is listed in the footnotes 15, 16, 152, 153,</p> <p>3 168, 169, 170 and 171; correct?</p> <p>4 MS. POHL: Same objections.</p> <p>5 A. I would say -- just the way you phrased</p> <p>6 the question.</p> <p>7 So I reviewed more than those pages.</p> <p>8 Those are the pages I cite to in my report.</p> <p>9 Q. Do you intend to rely at trial on</p> <p>10 testimony that you did not cite in your report?</p> <p>11 A. I think what I cited is sufficient.</p> <p>12 Q. Is that a yes, or a no?</p> <p>13 A. I don't intend to cite to anything else.</p> <p>14 Q. Do you intend to rely at trial on</p> <p>15 testimony that you did not cite in your report?</p> <p>16 MS. POHL: Object to form.</p> <p>17 A. No.</p> <p>18 Q. So is it correct that the evidence that</p> <p>19 you reviewed that you say is consistent with</p> <p>20 Qualcomm's determination is [REDACTED]</p> <p>21 [REDACTED]</p> <p>22 A. That's what I cite to in my report.</p>
<p>Page 151</p> <p>1 citations?</p> <p>2 MS. POHL: Object to form.</p> <p>3 A. No. I'm not saying that at all. I said</p> <p>4 I pulled the best ones, but there are others. It</p> <p>5 doesn't make my report incomplete. Simply making</p> <p>6 you aware that there are others.</p> <p>7 Q. Okay.</p> <p>8 Of the footnotes that you listed</p> <p>9 out, 15, 16, 152, 153, 168, 169, 170, 171, those</p> <p>10 consist of [REDACTED]</p> <p>11 [REDACTED]</p> <p>12 [REDACTED] correct?</p> <p>13 A. I don't know without going back and</p> <p>14 looking at the footnotes.</p> <p>15 Q. Let's go back and look at the footnotes.</p> <p>16 A. Sure.</p> <p>17 Yeah. So I think your question was,</p> <p>18 it may relate to...</p> <p>19 Q. You stated --</p> <p>20 A. Mm-hmm.</p> <p>21 Q. -- that the evidence that you reviewed</p> <p>22 that was consistent with the determination that</p>	<p>Page 153</p> <p>1 Q. That's what you rely on as the basis for</p> <p>2 your opinion; right?</p> <p>3 MS. POHL: Object to form.</p> <p>4 A. I do rely on those statements.</p> <p>5 Q. That is the extent of the evidence that</p> <p>6 you rely on that you say is consistent with the</p> <p>7 determination that Qualcomm made; right?</p> <p>8 MS. POHL: Object to form.</p> <p>9 A. Those are the ones I cite in the report,</p> <p>10 yes.</p> <p>11 Q. I'm not sure why you are qualifying.</p> <p>12 Why are you qualifying?</p> <p>13 A. What's the qualification?</p> <p>14 Q. You said, "Those are the ones I cite in</p> <p>15 the report, yes"?</p> <p>16 A. That's a true statement. Those are the</p> <p>17 ones I cite in the report.</p> <p>18 Q. Are there others that you will rely on</p> <p>19 at trial that are not cited in your report?</p> <p>20 A. You already asked me that, no.</p> <p>21 Q. Okay.</p> <p>22 So to be clear, the evidence that</p>

39 (Pages 150 - 153)

HIGHLY CONFIDENTIAL - ATTORNEYS EYES ONLY

<p>Page 158</p> <p>1 information that is included in these remarks; 2 right? 3 A. Mm-hmm. 4 Q. So the quote that you include in your 5 report talks about materiality, and omits the last 6 sentence of this paragraph, which is discussing not 7 including items that are obviously immaterial; 8 right? 9 A. Yes. 10 Q. Whose decision was it to omit the last 11 sentence of that paragraph. 12 A. I wrote the section. 13 Q. Why did you not include that last 14 question? 15 A. Because I didn't think it was relevant 16 to a situation where people were talking about 17 something clearly being material, and especially 18 when it says "obviously immaterial." 19 Q. Didn't you think that misrepresents what 20 he's saying in this paragraph? 21 A. No, I didn't. 22 Q. You can put this to the side.</p> <p>Page 159</p> <p>1 If you go to -- if you go back to 2 the evidence that you said you relied on that was 3 consistent with Qualcomm's determination, [REDACTED] [REDACTED] 5 A. Yes. 6 [REDACTED] are not available to 7 the public; correct? 8 A. I don't believe they are. 9 [REDACTED] [REDACTED] right? 11 A. I think that's right. They're recent. 12 Q. If we go to pages 2 and 3 of your 13 Materials Considered. 14 A. Sorry. Just give me a second. 15 Okay. 16 Q. I think the next page. 17 A. I'm sorry. You said 2 and 3. 18 Q. The bottom of page 2, [REDACTED] [REDACTED] -- [REDACTED] [REDACTED] [REDACTED]</p>	<p>Page 160</p> <p>[REDACTED] [REDACTED] 3 A. Yes. 4 Q. If we go to page 13 of your report, you 5 describe Item 7, "Management's Discussion and 6 Analysis of Financial Condition and Results of 7 Operations"; right? 8 A. Uh-huh. 9 Q. Then in Paragraph 41, you say, "The MDA 10 must 'focus specifically on material events and 11 uncertainties known to management that are 12 reasonably likely to cause reported financial 13 information not to be necessarily indicative of 14 future operating results or a future financial 15 condition.'" Right? 16 A. Yes. 17 Q. You cite to an SEC final rule; right? 18 A. Yes. 19 Q. Then you say, "This includes 20 descriptions and amounts of matters that are 21 reasonably likely based on management's assessment 22 to have a material impact on future operations."</p> <p>Page 161</p> <p>1 Right? 2 A. Yes. That's what that says. 3 Q. You also cite to an SEC final rule; 4 correct? 5 A. Yes. Same rule. 6 Q. Then you say, "The SEC indicates that 7 'reasonably likely' is a lower threshold than 'more 8 likely than not,' but a higher threshold than 9 'remote.'" Right? 10 A. Yes. 11 Q. There, you cite to SEC Financial 12 Reporting Manual Section 9220.11; right? 13 A. Yeah. 14 (Richards Exhibit 6, Division of Corporation 15 Finance, Financial Reporting Manual, was marked for 16 identification.) 17 Q. I'm handing you what has been marked as 18 Exhibit 6. This is a copy of the Financial 19 Reporting Manual in question; right? 20 A. Mm-hmm. 21 Q. If you look at the bottom of the cover 22 page, there's a disclaimer; right?</p>
---	--

41 (Pages 158 - 161)

HIGHLY CONFIDENTIAL - ATTORNEYS EYES ONLY

<p style="text-align: right;">Page 230</p> <p>1 Q. Okay.</p> <p>2 A. But all I'm saying is -- you answered me</p> <p>3 with her. I was saying, that's not who I was</p> <p>4 speaking about.</p> <p>5 Q. I'm saying that was Qualcomm's position,</p> <p>6 as reflected to Arm?</p> <p>7 A. In that letter. Yes, that's right.</p> <p>8 Q. Is there another letter that you're</p> <p>9 thinking of?</p> <p>10 A. No. You asked me that, too, already.</p> <p>11 No.</p> <p>12 Q. Well, you said "in that letter." So it</p> <p>13 seemed like you were specifying that letter for some</p> <p>14 reason.</p> <p>15 A. I'm just trying to be specific about</p> <p>16 that. Because I was making reference to some</p> <p>17 [REDACTED]</p> <p>18 So that's what I was trying to point</p> <p>19 out. There are other comments by other high-level</p> <p>20 Qualcomm people that are a little different, and I'm</p> <p>21 not suggesting that wasn't Qualcomm's position.</p> <p>22 Q. So going back to the Bloomberg article,</p>	<p style="text-align: right;">Page 232</p> <p>1 so I'm clarifying.</p> <p>2 Regardless of immediate or not, it</p> <p>3 just was not a cancellation; right?</p> <p>4 A. I don't know if we're getting hung up on</p> <p>5 cancellation versus termination. I'm trying to</p> <p>6 stick to the language in the letter, right, which I</p> <p>7 believe refers to the ability to terminate if</p> <p>8 certain things weren't addressed in 60 days. I'm</p> <p>9 not trying to get hung up on one versus the other.</p> <p>10 I'm just trying to stick to what the letter says.</p> <p>11 Q. Yeah. Maybe there is some confusion,</p> <p>12 and we can work through it.</p> <p>13 So the article refers to</p> <p>14 "cancellation"; right?</p> <p>15 A. It does.</p> <p>16 Q. That is not an accurate description of</p> <p>17 what the letter actually is saying; right?</p> <p>18 A. You know, I didn't write this. The</p> <p>19 reporter did.</p> <p>20 But I think when you -- I don't</p> <p>21 think that the letter was saying that this thing was</p> <p>22 going to be immediately canceled. It was a notice</p>
<p style="text-align: right;">Page 231</p> <p>1 we just discussed the language that's in the</p> <p>2 October 22, 2024, letter. You would agree that Arm</p> <p>3 Holdings PLC was not, in fact, canceling a license</p> <p>4 with Qualcomm; right?</p> <p>5 A. I think the October 22nd letter wasn't</p> <p>6 an immediate cancellation.</p> <p>7 Q. It wasn't any cancellation; right?</p> <p>8 A. It -- yeah. It certainly wasn't</p> <p>9 immediate. They talked about, you know, a remedy</p> <p>10 period and a 60 days and other things, yes.</p> <p>11 Q. It also wasn't an extended cancellation;</p> <p>12 right?</p> <p>13 MS. POHL: Object to form.</p> <p>14 Q. There was no cancellation?</p> <p>15 MS. POHL: Object to form.</p> <p>16 A. I think it says, and we can look back at</p> <p>17 it, but I thought it said that it was giving a</p> <p>18 notice that it could terminate in 60 days if other</p> <p>19 things weren't addressed.</p> <p>20 Q. Right.</p> <p>21 So I said, there was not a</p> <p>22 cancellation, and you said it wasn't immediate, and</p>	<p style="text-align: right;">Page 233</p> <p>1 that it could be terminated, if other things weren't</p> <p>2 done.</p> <p>3 Q. Right.</p> <p>4 A. And I don't think that the article here</p> <p>5 is necessarily saying exactly the same thing.</p> <p>6 Q. Did you look at any analyst reports that</p> <p>7 were issued after the Bloomberg article came out?</p> <p>8 A. Actually, I don't know. Give me a</p> <p>9 moment.</p> <p>10 So just so you know, the reason I</p> <p>11 said "I don't know" is because I may have looked at</p> <p>12 something -- Sandy's -- I'm sorry, Mr. Winer's</p> <p>13 report has some references, I think, to analyst</p> <p>14 reports. I may have looked at some of those. I</p> <p>15 think I did look at at least one of those.</p> <p>16 Q. Fair enough. It was a bad question.</p> <p>17 Did you look at any analyst reports</p> <p>18 that were issued after the Bloomberg article came</p> <p>19 out when preparing your report?</p> <p>20 A. I don't think I did.</p> <p>21 Q. Okay.</p> <p>22 Why did you not do so?</p>

59 (Pages 230 - 233)

HIGHLY CONFIDENTIAL - ATTORNEYS EYES ONLY

<p>Page 234</p> <p>1 A. Because I didn't think it was necessary 2 for my analysis. 3 Q. Analyst reports provide insight into the 4 views of the investing public; right? 5 A. That's probably being pretty generous, 6 but in views of the analyst and the firm they 7 represent. 8 Q. Do you think that analyst reports help 9 people invest? 10 A. I think they're meant to provide 11 additional information to those that are interested 12 about those companies, yeah. 13 Q. Do you think investors make use of 14 analyst reports? 15 A. Yeah, I think they do make use of 16 analyst reports. 17 Q. So one of the bases for your first 18 opinion, which we have discussed today, is 19 [REDACTED]; right? 20 A. Yes. 21 Q. Are you relying on any other deposition 22 testimony as a basis for your first opinion?</p> <p>Page 235</p> <p>1 A. I don't recall where I cited [REDACTED]. 2 I think it would be the other one. 3 Q. Are you saying you relied on 4 [REDACTED] as a basis for the first 5 opinion in your report? 6 A. I -- no. I think that I just was 7 recalling that I think [REDACTED] was the other 8 individual that -- that -- I'm sorry, that I 9 mentioned in my report. His depositions -- or his 10 deposition. 11 Q. But you did not rely on [REDACTED] 12 testimony as a basis for the first opinion; right? 13 MS. POHL: Object to form. 14 A. I don't cite it in my first opinion, but 15 if you look at Paragraph 74, which I think I pointed 16 to you before, that's one of the cites that I have 17 and I'm talking about the characterization of 18 material that's -- that was in some of the 19 depositions around Note 7. 20 So the cite isn't necessarily in 21 that section, but it's talking about the exact same 22 note.</p>	<p>Page 236</p> <p>1 Q. That is in support of your second 2 opinion; right? 3 A. The note it's talking about is 4 Footnote 7, and the concept of material which would 5 apply to both opinions. It -- the reference is in 6 72, which is in a paragraph that's in the second 7 opinion. 8 Q. So you're saying you rely on [REDACTED] [REDACTED] even though you do not directly cite [REDACTED] as a basis for the opinion or 12 in the summary of opinions for the first opinion; 13 right? 14 MS. POHL: Object to form. 15 A. [REDACTED] testimony is on the exact 16 name Note relating to the same concept. So I don't 17 have a footnote, and I could have easily done that, 18 had a footnote in my report, and stuck his extra 19 words up in the beginning, too. I chose not to do 20 that, but it's [REDACTED]. [REDACTED]. 22 Q. So is that a yes or a no --</p> <p>Page 237</p> <p>1 A. I'm sorry. Give me the question again. 2 Q. -- in response to my question? 3 So you say you rely on [REDACTED] 4 testimony, and you also rely on [REDACTED] 5 testimony, even though you do not directly cite 6 [REDACTED] testimony as a basis for the opinion, 7 or in the summary of opinions for the first opinion; 8 is that correct? 9 MS. POHL: Object to form. 10 A. I'm relying on both. They're talking 11 about [REDACTED]. I could have easily 12 put the quote up into the first opinion around what 13 I was talking about there. It's one and the same. 14 Q. Is there any other testimony that you 15 rely on as a basis for your first opinion? 16 A. No. 17 Q. Okay. 18 [REDACTED] [REDACTED], was marked for identification.) 20 Q. I'm going to hand you what has been 21 marked as Richards Exhibit 12. 22 So this is the transcript for</p>
---	--

60 (Pages 234 - 237)

HIGHLY CONFIDENTIAL - ATTORNEYS EYES ONLY

<p style="text-align: right;">Page 258</p> <p>1 Q. You define material as if it was 2 material relative to what the requirements are for 3 disclosure. 4 So without using the word 5 "material," how do you define material as it is used 6 in Paragraph 91? 7 A. I think you go back to the guidance that 8 the Commission's put out, which is predicated on the 9 Supreme Court's precedent, which we talked about 10 earlier, is, you know, would it be impactful, have 11 an effect on a reasonable investor in the total mix 12 of information. 13 That's not exactly the definition, 14 but that's close. It's in those documents. 15 Q. What did you do to familiarize yourself 16 with Qualcomm and its business to understand the 17 impact of Arm's alleged action, and whether that 18 would or would not have been material to Qualcomm's 19 business? 20 A. So I read their filings. I looked at 21 other interactions that they had at investor 22 meetings, in the period of time that I -- in my</p>	<p style="text-align: right;">Page 260</p> <p>1 Complaint, the types of harm they characterize, as 2 well as, some of that is in the depositions, too. 3 Q. What is Qualcomm's business? 4 A. What is Qualcomm's business? 5 Q. Yeah. 6 A. Well, they have a series of businesses. 7 So they create and sell chips, basically, you know, 8 to mobile phones, to -- they're getting some new 9 businesses relative to, like, data centers. They 10 have, I believe, an automotive division. They have 11 a series of businesses. Basically where can a chip 12 intersect with different industries. 13 They've done a series of verticals 14 around that. But the biggest chunk of their 15 business, I believe, is mobile. 16 Q. You quote from the Second Amended 17 Complaint, in Paragraph 69. 18 A. I'm sorry. Paragraph -- 19 Q. This is under a heading called 20 Qualcomm's Allegations in the Second Amended 21 Complaint; right? 22 A. Yes. I see where you're looking.</p>
<p style="text-align: right;">Page 259</p> <p>1 report sort of covers. I looked at the transcripts 2 we talked about. I looked at the letter. 3 Q. I don't think that answer is responsive 4 to the question that I asked. 5 A. Okay. I'm sorry. What's your question 6 again? 7 Q. I'm saying, how did you familiarize 8 yourself with Qualcomm and its business so that you 9 could understand -- you read the Second Amended 10 Complaint, the allegations of harm -- whether or not 11 those allegations would or would not be material to 12 Qualcomm? 13 A. So what I didn't mention is I did read 14 the Second Amended Complaint, obviously, but when 15 you read some of the other documents that I'm 16 talking about, they are talking about the business. 17 Obviously, the Second Amended 18 Complaint talks about the business, the 19 relationship. So, you know, a series of those 20 documents do talk about Qualcomm's business, the 21 background on, and the dispute, depending on which 22 one you're talking about, and in the Second Amended</p>	<p style="text-align: right;">Page 261</p> <p>1 Q. You would agree with me that none of the 2 quotes say anything about materiality; right? 3 A. For A and B, I don't see the word 4 "materiality" in the quotes. Give me just one sec 5 to look at C, D, and E. 6 Yeah. I don't see any of those five 7 paragraphs, the word "material" or "materiality." 8 Q. You would agree with me that not every 9 negative business impact to a customer is material 10 to that company's stock; right? 11 A. Yeah. I think that's fair. Not 12 negative, every event. They could lose a good 13 employee. That's a negative event, but it doesn't 14 mean it's disclosable, depending on who the employee 15 is, yeah. 16 Q. Do you know what Qualcomm's revenue was 17 in 2024? 18 A. No. Not off the top of my head. It's a 19 big number. They're a big company. They're a 20 well-seasoned issuer. So I don't know what their 21 revenue was off the top of my head. 22 Q. Does it sound familiar if I told you</p>

66 (Pages 258 - 261)

HIGHLY CONFIDENTIAL - ATTORNEYS EYES ONLY

<p style="text-align: right;">Page 298</p> <p>1 A. Mm-hmm.</p> <p>2 Q. -- do you think that investors in Arm</p> <p>3 would care if Arm loses all of its royalties from</p> <p>4 Qualcomm, amounting to [REDACTED] ?</p> <p>5 MS. POHL: Same objection.</p> <p>6 A. See the -- can I just ask a clarify</p> <p>7 question, and I'll answer your question.</p> <p>8 Is the [REDACTED]</p> <p>9 something that takes place over time, all at once?</p> <p>10 Because it matters. If it's [REDACTED] of one</p> <p>11 year's revenues that's going be absorbed over five</p> <p>12 years, may or may not matter as much. If it's</p> <p>13 [REDACTED] of revenues that all roll through in one</p> <p>14 period, would likely matter more.</p> <p>15 So I keep giving you the same</p> <p>16 answer. It's like it very well could be material,</p> <p>17 and could be of a lot of interest to investors. I</p> <p>18 don't have all the facts to have made that</p> <p>19 assessment, hypothetically, to understand if it</p> <p>20 would or wouldn't have. Right.</p> <p>21 If you're not being paid a royalty</p> <p>22 over [REDACTED], and your payment doesn't show up</p>	<p style="text-align: right;">Page 300</p> <p>1 But in my hypothetical, I'm using --</p> <p>2 it's a little different than yours, right, so I</p> <p>3 define what the period is and when the negative</p> <p>4 dollar amount was coming through.</p> <p>5 Q. The period that you're defining is a</p> <p>6 quarterly period?</p> <p>7 A. In my hypothetical, I used a quarter,</p> <p>8 where, you know, [REDACTED] or more of expected</p> <p>9 revenue is no longer taking place. I would have</p> <p>10 expected some form of likely disclosure in that</p> <p>11 situation around their MD&A trends.</p> <p>12 Which, by the way, I don't know if</p> <p>13 these guys did or not because we're not talking</p> <p>14 about MD&A trends.</p> <p>15 MR. BRALY: Do you want to take a</p> <p>16 break?</p> <p>17 THE WITNESS: That's up to you. I'm</p> <p>18 good. I mean, I'm happy to take a break. I've got</p> <p>19 no problem if you want to do that. I mean, we're</p> <p>20 coming into the last hour, so --</p> <p>21 MS. POHL: Take five minutes.</p> <p>22 THE VIDEOGRAPHER: The time is</p>
<p style="text-align: right;">Page 299</p> <p>1 over [REDACTED], so your [REDACTED] of revenue is</p> <p>2 all that royalty but only in one quarter, then when</p> <p>3 you actually would look at when the royalty wasn't</p> <p>4 being paid, it may not be material.</p> <p>5 So all I'm saying is to just --</p> <p>6 there are some other factors you'd have to look at,</p> <p>7 but it could be.</p> <p>8 Q. In what situation would you think it's</p> <p>9 material?</p> <p>10 A. In the hypothetical, when I think it's</p> <p>11 material?</p> <p>12 I think if you're talking about each</p> <p>13 period on a go-forward basis, each quarterly period,</p> <p>14 that you're talking about something in the scale of</p> <p>15 [REDACTED] per period, and again, just sort of</p> <p>16 depending on the facts and circumstances as to the</p> <p>17 why on that is, but if you have an ongoing reduction</p> <p>18 of revenue, and that is a key -- KPI here, that, you</p> <p>19 know, [REDACTED] of the period would be pretty</p> <p>20 substantial. I would think that would be something</p> <p>21 that would be -- that would certainly get some</p> <p>22 interest from investors.</p>	<p style="text-align: right;">Page 301</p> <p>1 3:30 p.m. We're going off the record.</p> <p>2 (RECESS, 3:30 p.m. - 3:48 p.m.)</p> <p>3 THE VIDEOGRAPHER: The time is</p> <p>4 3:48 p.m. We're going back on the record.</p> <p>5 Please proceed, counsel.</p> <p>6 BY MR. BRALY:</p> <p>7 Q. Welcome back.</p> <p>8 Did you speak with anyone during the</p> <p>9 break about the substance of your testimony?</p> <p>10 A. I did not.</p> <p>11 Q. As part of the basis for your first</p> <p>12 opinion --</p> <p>13 A. Mm-hmm.</p> <p>14 Q. -- you rely on ASC 450; right?</p> <p>15 A. Yes.</p> <p>16 Q. You did not perform an assessment to</p> <p>17 evaluate the level of probability that a loss may</p> <p>18 have been incurred with respect to the Notice</p> <p>19 Letter; right?</p> <p>20 A. I did not.</p> <p>21 Q. You did not perform an assessment of</p> <p>22 whether the loss could be reasonably estimated;</p>

76 (Pages 298 - 301)

HIGHLY CONFIDENTIAL - ATTORNEYS EYES ONLY

<p style="text-align: right;">Page 302</p> <p>1 right?</p> <p>2 A. I did not do an analysis to determine</p> <p>3 that.</p> <p>4 I'm sorry. I didn't do an</p> <p>5 independent analysis to determine that.</p> <p>6 Q. Is it correct that the harm factors that</p> <p>7 you discuss, really sort of in the relation to the</p> <p>8 second opinion, are all future focused?</p> <p>9 A. I think that's generally true.</p> <p>10 Q. Did you say "genuinely true" or</p> <p>11 "generally"?</p> <p>12 A. Generally. Generally true.</p> <p>13 Q. Why do you say "generally"?</p> <p>14 A. Just because I don't have a completely</p> <p>15 crisp recollection all the harm factors, but the</p> <p>16 ones that I can recall are talking about agreements</p> <p>17 or transactions or things they were trying to do --</p> <p>18 they were trying to do. They hadn't entered into</p> <p>19 them yet.</p> <p>20 So there wouldn't necessarily have</p> <p>21 been a current effect on the financial statements as</p> <p>22 of September 29th for the 10-K, or you know,</p>	<p style="text-align: right;">Page 304</p> <p>1 BY MS. POHL:</p> <p>2 Q. Hi, Mr. Richards. A couple questions</p> <p>3 for you.</p> <p>4 A. Sure.</p> <p>5 Q. If you could just pull out your report</p> <p>6 for me, and look at Exhibit 2.</p> <p>7 A. Okay.</p> <p>8 Q. At the top of the page, do you see where</p> <p>9 it says, "In addition to the documents cited</p> <p>10 throughout my report, I consider the following</p> <p>11 documents in preparing my report."?</p> <p>12 A. Yes.</p> <p>13 Q. What does that sentence mean?</p> <p>14 A. These were other documents that I</p> <p>15 requested or reviewed in the course of doing my</p> <p>16 work, but didn't make it into the report from the</p> <p>17 standpoint of a footnote or something I actually</p> <p>18 cited, but I had evaluated these documents.</p> <p>19 Q. So these other documents formed bases</p> <p>20 for your opinions?</p> <p>21 A. Yeah, they were other things I looked</p> <p>22 at, yes.</p>
<p style="text-align: right;">Page 303</p> <p>1 whatever it was, December 29th for the 10-Q, but</p> <p>2 they were things they were trying to do, is my</p> <p>3 recollection. I don't remember all the harm facts,</p> <p>4 but that's my recollection.</p> <p>5 MR. BRALY: Okay. I have no more</p> <p>6 questions.</p> <p>7 THE WITNESS: At all for today?</p> <p>8 MR. BRALY: At all for today.</p> <p>9 THE WITNESS: Dude, he set me up. I</p> <p>10 thought we were going for another hour.</p> <p>11 MS. POHL: I have no questions,</p> <p>12 either, but let me take -- can I take two minutes to</p> <p>13 check my notes just really quick, and we can go off</p> <p>14 the record.</p> <p>15 THE VIDEOGRAPHER: The time is</p> <p>16 3:51 p.m. We're going off the record.</p> <p>17 (RECESS, 3:51 p.m. - 3:54 p.m.)</p> <p>18 THE VIDEOGRAPHER: The time is</p> <p>19 approximately 3:54 p.m. We're going back on the</p> <p>20 record.</p> <p>21 Please proceed, counsel.</p> <p>22 EXAMINATION</p>	<p style="text-align: right;">Page 305</p> <p>1 Q. Then if you flip to the next page,</p> <p>2 page 2 and 3, you see where it says, Depositions and</p> <p>3 Related Exhibits?</p> <p>4 A. Yes.</p> <p>5 Q. At the end of these bullet points, it</p> <p>6 says, Deposition of so and so, and then there's a</p> <p>7 Exhibits (1 through a number).</p> <p>8 Do you see that?</p> <p>9 A. Uh-huh.</p> <p>10 Q. What is the Exhibits (1 through a</p> <p>11 number) mean in these bullets?</p> <p>12 A. The exhibits that I looked at.</p> <p>13 Q. You looked at those at well?</p> <p>14 A. The exhibits?</p> <p>15 Q. Mm-hmm.</p> <p>16 A. I didn't look at every last exhibit --</p> <p>17 for each of these?</p> <p>18 Q. Mm-hmm.</p> <p>19 A. For certain individuals, I looked at all</p> <p>20 the exhibits. For others, I only looked at some</p> <p>21 exhibits. And they may be one in here that I didn't</p> <p>22 look at any of the exhibits. Some other member of</p>

77 (Pages 302 - 305)

HIGHLY CONFIDENTIAL - ATTORNEYS EYES ONLY

<p>Page 326</p> <p>1 QUALCOMM INCORPORATED, et al. v. ARM HOLDINGS PLC</p> <p>2 10/2/2025 - STEVEN RICHARDS</p> <p>3 ACKNOWLEDGEMENT OF DEPONENT</p> <p>4 I, STEVEN RICHARDS, do hereby declare that I</p> <p>5 have read the foregoing transcript, I have made</p> <p>6 any corrections, additions, or changes I deemed</p> <p>7 necessary as noted on the Errata to be appended</p> <p>8 hereto, and that the same is a true, correct and</p> <p>9 complete transcript of the testimony given by me.</p> <p>10</p> <p>11 _____</p> <p>12 STEVEN RICHARDS Date</p> <p>13 *If notary is required</p> <p>14 SUBSCRIBED AND SWORN TO BEFORE ME THIS</p> <p>15 _____ DAY OF _____, 20____.</p> <p>16</p> <p>17</p> <p>18 _____</p> <p>19 NOTARY PUBLIC</p> <p>20</p> <p>21</p> <p>22</p>	

EXHIBIT 14

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

FORM 10-K

(Mark one)

☒ ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the fiscal year ended September 29, 2024

OR

☐ TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the transition period from _____ to _____ .

Commission File Number 0-19528

QUALCOMM Incorporated

(Exact name of registrant as specified in its charter)

Delaware
(State or Other Jurisdiction of Incorporation or Organization)

5775 Morehouse Dr., San Diego, California
(Address of Principal Executive Offices)

95-3685934
(I.R.S. Employer Identification No.)

92121-1714
(Zip Code)

(858) 587-1121

(Registrant's telephone number, including area code)

Securities registered pursuant to Section 12(b) of the Act:

<u>Title of Each Class</u>	<u>Trading Symbol(s)</u>	<u>Name of Each Exchange on Which Registered</u>
Common stock, \$0.0001 par value	QCOM	The Nasdaq Stock Market LLC

Securities registered pursuant to Section 12(g) of the Act:

None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act.

Yes ☒ No ☐

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act.

Yes ☐ No ☒

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes ☒ No ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer ☒ Accelerated filer ☐ Non-accelerated filer ☐ Smaller reporting company ☐ Emerging growth company ☐

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Indicate by check mark whether the registrant has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its

audit report. ☒

If securities are registered pursuant to Section 12(b) of the Act, indicate by check mark whether the financial statements of the registrant included in the filing reflect the correction of an error to previously issued financial statements. ☐

Indicate by check mark whether any of those error corrections are restatements that required a recovery analysis of incentive-based compensation received by any of the registrant's executive officers during the relevant recovery period pursuant to §240.10D-1(b). ☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act). Yes ☐ No ☒

The aggregate market value of the voting and non-voting common equity held by non-affiliates of the registrant at March 22, 2024 (the last business day of the registrant's most recently completed second fiscal quarter) was \$190.0 billion, based upon the closing price of the registrant's common stock on that date as reported on the NASDAQ Global Select Market.

The number of shares outstanding of the registrant's common stock was 1,111 million at November 4, 2024.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant's definitive Proxy Statement for its 2025 Annual Meeting of Stockholders, to be filed with the Commission subsequent to the date hereof, are incorporated by reference into Part III of this Annual Report where indicated.

performance obligations. Our payment terms are generally short-term in duration, with payment due shortly after delivery for product sales and within the following quarter for QTL sales-based royalties.

Share-Based Compensation. Share-based compensation expense for equity-classified awards, principally related to restricted stock units (RSUs), is measured at the grant date, or at the acquisition date for awards assumed in business combinations, based on the estimated fair value of the award and is recognized over the employee's requisite service period. The fair values of RSUs are estimated based on the fair market values of the underlying stock on the dates of grant or dates the RSUs are assumed. Share-based compensation expense is adjusted to exclude amounts related to share-based awards that are expected to be forfeited.

Legal and Regulatory Proceedings. We are currently involved in certain legal and regulatory proceedings. Litigation and investigations are inherently uncertain, and we face difficulties in evaluating or estimating likely outcomes or ranges of possible loss in antitrust and trade regulation investigations in particular. Investigations by antitrust and trade regulation agencies are not conducted in a consistent manner across jurisdictions. Further, each country and agency has different sets of laws, rules and regulations, both substantive and procedural, as well as different legal principles, theories and potential remedies, and some agencies may seek to use the investigation to advance domestic policy goals. Depending on the jurisdiction, these investigations can involve non-transparent procedures under which we may not receive access to evidence relied upon by the enforcement agency or that may be exculpatory and may not be informed of the specific legal theories or evidence considered or relied upon by the agency. Unlike in civil litigation in the United States, in foreign proceedings, we may not be entitled to discovery or depositions, allowed to cross-examine witnesses or confront our accusers. As a result, we may not be aware of, and may not be entitled to know, all allegations against us, or the information or documents provided to, or discovered or prepared by, the agency. Accordingly, we may have little or no idea what an agency's intent is with respect to liability, penalties or the timing of a decision. In many cases the agencies are given significant discretion, and any available precedent may have limited, if any, predictive value in their jurisdictions or other jurisdictions. Accordingly, we cannot predict the outcome of these matters. A broad range of remedies with respect to our business practices that are deemed to violate applicable laws are potentially available. These remedies may include, among others, injunctions, monetary damages or fines or other orders to pay money and the issuance of orders to cease certain conduct and/or to modify our business practices.

If there is at least a reasonable possibility that a material loss may have been incurred associated with pending legal and regulatory proceedings, we disclose such fact, and if reasonably estimable, we provide an estimate of the possible loss or range of possible loss. We record our best estimate of a loss related to pending legal and regulatory proceedings when the loss is considered probable and the amount can be reasonably estimated. Where a range of loss can be reasonably estimated with no best estimate in the range, we record the minimum estimated liability. As additional information becomes available, we assess the potential liability related to pending legal and regulatory proceedings and revise our estimates and update our disclosures accordingly. Significant judgment is required in both the determination of probability and the determination as to whether a loss is reasonably estimable. Our legal costs associated with defending ourselves are recorded to expense as incurred.

Foreign Currency. Certain foreign subsidiaries use a local currency as the functional currency. Resulting translation gains or losses are recorded as a component of accumulated other comprehensive income (loss). Transaction gains or losses related to balances denominated in a currency other than the functional currency of the entity involved are recognized in the consolidated statements of operations.

Income Taxes. The asset and liability approach is used to recognize deferred tax assets and liabilities for the expected future tax consequences of temporary differences between the carrying amounts and the tax bases of assets and liabilities. Tax law and rate changes are reflected in income in the period such changes are enacted. We record a valuation allowance to reduce deferred tax assets to the amount that is more likely than not to be realized. We include interest and penalties related to income taxes, including unrecognized tax benefits, within income tax expense. We classify all deferred tax assets and liabilities as noncurrent in the consolidated balance sheets. We recognize excess tax benefits and shortfall tax detriments associated with share-based awards in the consolidated statements of operations, as a component of income tax expense, when realized.

Our income tax returns are based on calculations and assumptions that are subject to examination by the Internal Revenue Service (IRS) and other tax authorities. In addition, the calculation of our tax liabilities involves dealing with uncertainties in the application of complex tax regulations. We recognize liabilities for uncertain tax positions based on a two-step process. The first step is to evaluate the tax position for recognition by determining if the weight of available evidence indicates that it is more likely than not that the position will be sustained on audit, including resolution of related appeals or litigation processes, if any. The second step is to measure the tax benefit as the largest amount that is more than 50% likely of being realized upon settlement. We continually assess the likelihood and amount of potential adjustments and adjust the income tax provision, income taxes payable and deferred taxes in the period in which the facts that give rise to a revision become known.

We are subject to income taxes in the United States and numerous foreign jurisdictions, and the assessment of our income tax positions involves dealing with uncertainties in the application of complex tax laws and regulations in various taxing jurisdictions. In addition, the application of tax laws and regulations is subject to legal and factual interpretation, judgment and uncertainty. Tax laws and regulations themselves are subject to change as a result of changes in fiscal policy, changes in legislation, the evolution of regulations and court rulings. Significant judgments and estimates are required in

QUALCOMM Incorporated
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Note 7. Commitments and Contingencies

Legal and Regulatory Proceedings.

Consolidated Securities Class Action Lawsuit: On January 23, 2017 and January 26, 2017, securities class action complaints were filed by purported stockholders of us in the United States District Court for the Southern District of California against us and certain of our then current and former officers and directors. The complaints alleged, among other things, that we violated Sections 10(b) and 20(a) of the Securities Exchange Act of 1934, as amended, and Rule 10b-5 thereunder, by making false and misleading statements and omissions of material fact in connection with certain allegations that we are or were engaged in anticompetitive conduct. The complaints sought unspecified damages, interest, fees and costs. The court consolidated the two actions, and on July 3, 2017, the plaintiffs filed a consolidated amended complaint asserting the same basic theories of liability and requesting the same basic relief. On May 23, 2022, the plaintiffs filed a motion for class certification, and on March 20, 2023, the court issued an order granting in part and denying in part the plaintiffs' motion for class certification. The order denied class certification on the basis of alleged misrepresentations relating to our chip-level licensing practices, but certified a class on the basis of alleged misrepresentations relating to the separate operations of QCT and QTL. We reached a proposed settlement with the plaintiffs to resolve this litigation, and on June 18, 2024, we and the plaintiffs, along with the individual defendants, filed a joint Stipulation and Agreement of Settlement with the court. The settlement was approved by the court on September 27, 2024. In the third quarter of fiscal 2024, we recorded a charge of \$75 million to other expenses for the settlement amount, which amount was paid in the fourth quarter of fiscal 2024.

Consumer Class Action Lawsuits: Beginning in January 2017, a number of consumer class action complaints were filed against us in the United States District Courts for the Southern and Northern Districts of California, each on behalf of a putative class of purchasers of cellular phones and other cellular devices. The cases filed in the Southern District of California were subsequently transferred to the Northern District of California. On July 11, 2017, the plaintiffs filed a consolidated amended complaint alleging that we violated California and federal antitrust and unfair competition laws by, among other things, refusing to license standard-essential patents to our competitors, conditioning the supply of certain of our baseband chipsets on the purchaser first agreeing to license our entire patent portfolio, entering into exclusive deals with companies, including Apple Inc., and charging unreasonably high royalties that do not comply with our commitments to standard setting organizations. The complaint sought unspecified damages and disgorgement and/or restitution, as well as an order that we be enjoined from further unlawful conduct. On September 27, 2018, the court certified the class. We appealed the court's class certification order to the United States Court of Appeals for the Ninth Circuit (Ninth Circuit). On September 29, 2021, the Ninth Circuit vacated the class certification order, ruling that the district court had failed to correctly assess the propriety of applying California law to a nationwide class, and remanded the case to the district court. On June 10, 2022, the plaintiffs filed an amended complaint, limiting the proposed class to California residents rather than a nationwide class. We filed a motion to dismiss the amended complaint, and on January 6, 2023, the court issued an order granting in part and denying in part our motion to dismiss. We subsequently filed a motion for summary judgment on the plaintiffs' remaining claims. The court granted our motion in its entirety and, on October 5, 2023, entered final judgment in Qualcomm's favor. On November 2, 2023, the plaintiffs filed a notice of appeal to the Ninth Circuit, and on October 15, 2024, the court held a hearing on the appeal. The court has not yet issued a ruling. We intend to continue to vigorously defend ourselves in this matter.

Beginning in November 2017, several other consumer class action complaints were filed against us in Canada (in the Supreme Court of British Columbia and the Quebec Superior Court), Israel (in the Haifa District Court) and the United Kingdom (in the Competition Appeal Tribunal), each on behalf of a putative class of purchasers of cellular phones and other cellular devices, alleging violations of certain of those countries' competition and consumer protection laws and seeking damages. The claims in these complaints are similar to those in the U.S. consumer class action complaints described above. These matters are at various stages of litigation, and we intend to continue to vigorously defend ourselves.

ParkerVision, Inc. v. QUALCOMM Incorporated: On May 1, 2014, ParkerVision filed a complaint against us in the United States District Court for the Middle District of Florida alleging that certain of our products infringed seven ParkerVision patents. On August 21, 2014, ParkerVision amended the complaint, alleging that we infringed 11 ParkerVision patents and sought damages and injunctive and other relief. ParkerVision subsequently reduced the number of patents asserted to three. The asserted patents are now expired, and injunctive relief is no longer available. ParkerVision continues to seek damages related to the sale of many of our radio frequency (RF) products sold between 2008 and 2018. On March 23, 2022, the district court entered judgment in our favor on all claims and closed the case. On April 20, 2022, ParkerVision filed a notice of appeal to the United States Court of Appeals for the Federal Circuit (Federal Circuit). On September 6, 2024, the Federal Circuit reversed the judgment of the district court, citing certain substantive and procedural issues, and remanded the case to the district court for further proceedings. We intend to continue to vigorously defend ourselves in this matter.

Arm Ltd. v. QUALCOMM Incorporated: On August 31, 2022, Arm Ltd. (Arm) filed a complaint against us in the United States District Court for the District of Delaware. Our subsidiaries Qualcomm Technologies, Inc. and NuVia, Inc. (Nuvia) are also named in the complaint. The complaint alleges that following our acquisition of Nuvia, we and Nuvia breached Nuvia's Architecture License Agreement with Arm (the Nuvia ALA) by failing to comply with the termination obligations under the Nuvia ALA. Arm is seeking specific performance, including that we cease all use of and destroy any technology that was developed under the Nuvia ALA, including processor core technology (which Arm alleges includes our custom Qualcomm Oryon CPU cores). Arm's complaint also contends that we violated the Lanham Act through trademark infringement and false designation of origin through unauthorized use of Arm's trademarks and seeks associated injunctive and declaratory relief; however, Arm subsequently informed the court of its intent to withdraw such claims.

QUALCOMM Incorporated

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

On September 30, 2022, we filed our Answer and Counterclaim in response to Arm's complaint denying Arm's claims. Our counterclaim seeks a declaratory judgment that we did not breach the Nuvia ALA or the Technology License Agreement between Nuvia and Arm (together with the Nuvia ALA, the Arm-Nuvia Agreements) and that, following the acquisition of Nuvia, our architected cores (including all further developments, iterations or instantiations of the technology we acquired from Nuvia) and System-on-Chip (SoC) products incorporating such cores are fully licensed under our existing Architecture License Agreement with Arm (the Qualcomm ALA) and Technology License Agreement with Arm (together with the Qualcomm ALA, the Arm-Qualcomm Agreements). We further seek an order enjoining Arm from making any claim that our products are not licensed under the Arm-Qualcomm Agreements, are not Arm-compliant or that we are prohibited from using Arm's marks in the marketing of any such products. On October 26, 2022, we filed an Amended Counterclaim seeking additional declaratory relief that certain statements Arm is making in the marketplace concerning our rights under the Arm-Qualcomm Agreements are false, and that Arm has no right to prevent us from shipping our products, which are validly licensed. On March 22, 2024, we filed a Second Amended Counterclaim asserting that Arm has breached the Arm-Nuvia Agreements by continuing to use Nuvia technology and by failing to return or destroy Nuvia confidential information after the Arm-Nuvia Agreements were terminated. The Second Amended Counterclaim seeks damages related to the asserted breaches. On July 10, 2024, Arm filed a motion for partial summary judgment that the Nuvia ALA was properly terminated, that the Nuvia ALA was breached, and that Arm did not breach the Arm-Nuvia Agreements. We also filed a motion for summary judgment on Arm's breach of contract claims, that Qualcomm's architected cores are licensed under the Qualcomm ALA, and that Qualcomm has not infringed Arm's trademarks. On October 30, 2024, the court denied both parties' motions for summary judgment. Trial is scheduled to begin on December 16, 2024. We intend to continue to vigorously defend ourselves against Arm's claims in this matter.

On April 18, 2024, we filed a separate complaint (captioned QUALCOMM Incorporated v. Arm Ltd.) against Arm in the United States District Court for the District of Delaware. The complaint alleges that Arm has breached the Qualcomm ALA by failing to provide certain deliverables that Arm is obligated to provide. The complaint seeks an order that Arm comply with its contractual obligations, damages, and additional relief. Arm moved to dismiss this complaint, and on October 30, 2024, the court denied Arm's motion to dismiss. No trial date has been set for this case.

On October 22, 2024, Arm provided us with a notice alleging that we have breached the Qualcomm ALA by marketing products that contain CPUs that Arm alleges use designs, technology and code created by Nuvia employees prior to our acquisition of Nuvia; by seeking support and verification from Arm for additional products that use such alleged designs, technology and code; and by suing Arm for breach of the Qualcomm ALA. Arm's notice asserts that it will have the right to terminate the Qualcomm ALA if such alleged breaches are not cured within 60 days of such notice. We disagree with Arm's allegations, including that we are in breach of the Qualcomm ALA.

Contingent Losses and Other Considerations: Litigation and investigations are inherently uncertain, and we face difficulties in evaluating or estimating likely outcomes or ranges of possible loss, particularly in antitrust and trade regulation investigations. We have not recorded any accrual at September 29, 2024 for contingent losses associated with the pending matters described above based on our belief that losses, while reasonably possible, are not probable. Further, any possible amount or range of loss cannot be reasonably estimated at this time. The unfavorable resolution of one or more of these matters could have a material adverse effect on our business, results of operations, financial condition or cash flows. We are engaged in numerous other legal actions not described above (for example, our 2010 European Commission matter relating to the Icera complaint, and other matters arising in the ordinary course of our business, including those relating to employment matters or the initiation or defense of proceedings relating to intellectual property rights) and, while there can be no assurance, we believe that the ultimate outcome of these other legal actions will not have a material adverse effect on our business, results of operations, financial condition or cash flows.

Indemnifications. We generally do not indemnify our customers, licensees and suppliers for losses sustained from infringement of third-party intellectual property rights. However, we are contingently liable under certain agreements to defend and/or indemnify certain customers, licensees, and suppliers against certain types of liability and/or damages arising from the infringement of third-party intellectual property rights and to indemnify certain companies that purchased businesses we previously consolidated against certain contingent losses. Our obligations under these agreements may be limited in terms of time and/or amounts, and in some instances, we may have recourse against third parties for certain payments made by us. Claims and reimbursements under indemnification arrangements have not been material to our consolidated financial statements. We have not recorded accruals for certain claims under indemnification arrangements based on our belief that additional liabilities, while possible, are not probable. Further, any possible range of loss cannot be reasonably estimated at this time.

EXHIBIT 15

7/3/2025

Qualcomm Incorporated, et al. v. Arm Holdings PLC, et al. Cristiano R. Amon 30(b)(6)
Highly Confidential

Page 1

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

-----x
QUALCOMM INCORPORATED,)
a Delaware corporation;)
QUALCOMM TECHNOLOGIES,) C.A. No. 24-490-MN
INC., a Delaware)
corporation,)
)
Plaintiffs,)
)
v.)
)
ARM HOLDINGS PLC, f/k/a)
ARM LTD., a U.K.)
corporation,)
)
Defendants.)
)
-----x

HIGHLY CONFIDENTIAL
30(b)(6) DEPOSITION OF QUALCOMM INCORPORATED and
QUALCOMM TECHNOLOGIES, INC., by and through
its Designated Representative,
CRISTIANO R. AMON
SAN DIEGO, CALIFORNIA
THURSDAY, JULY 3, 2025
9:14 A.M.

Reported by: Leslie A. Todd, CSR No. 5129 and RPR

DIGITAL EVIDENCE GROUP
1730 M Street, NW, Suite 812
Washington, D.C. 20036
(202) 232-0646

7/3/2025

Qualcomm Incorporated, et al. v. Arm Holdings PLC, et al.

Cristiano R. Amon 30(b)(6)

Highly Confidential

Page 218

1 A. Fair.

2 Q. And can we agree, looking at this
3 10-K by Qualcomm, that the Ian King article in
4 Bloomberg from October of 22nd or 23rd, 2024,
5 insofar as that told everyone publicly of these
6 allegations, by two weeks later, on November 6th,
7 Qualcomm itself had told the world about those
8 allegations?

9 MS. DUNN: Objection to form.

10 THE WITNESS: True.

11 BY MR. LoCASCIO:

12 Q. Can you tell me, sir, in the harms
13 you identified earlier, which of those harms befell
14 Qualcomm between the 22nd of October 2024, and the
15 6th of November, 2024?

16 MS. DUNN: Objection to form.

17 THE WITNESS: Are you asking the
18 difference in harm between the two
19 dates?

20 BY MR. LoCASCIO:

21 Q.

Page 220

1 So he's not speaking as somebody who is
2 drawing legal conclusions. So I mean,
3 he's -- you can ask your questions, but
4 right now, you're asking him to --

5 MR. LoCASCIO: We're going to be
6 on the flip side of the table soon
7 enough, but I think in Delaware speak,
8 we're getting a little far from what's
9 the norm on the objections, so --

10 BY MR.

Page 219

[REDACTED] calls for a legal conclusion.

14 legal conclusion.

15 MR. LoCASCIO: He can answer the
16 question. He already -- he's the one
17 who brought up "material" in the first
18 instance.

19 MS. DUNN: Well, but I don't
20 think he was bringing it up --

21 MR. LoCASCIO: Look, Karen,
22 like --

23 MS. DUNN: Well, let me -- let
24 me make the record, since you just said.
25 He's not here to testify as a lawyer.

Page 221

1 [REDACTED]
2 [REDACTED]
3 [REDACTED]
4 [REDACTED]
5 Q. Okay. But you believe some of it
6 still remains today?

7 A. Yes.

8 Q. And --

9 A. But it's different. It's not related
10 to the ALA. We talked about that before.

11 Q. The -- the impact or harm to the
12 business that you believe is continuing since the
13 verdict, am I right that that's unrelated to the
14 Qualcomm ALA?

15 A. It's unrelated to the Qualcomm ALA.

16 Q. Okay. In the 10-K, I want to ask you
17 about one other paragraph, if you don't mind. It's
18 page 30. So you've got to go back to the front
19 section, page 30.

20 A. Back?

21 Q. Yeah, earlier in the document, where
22 it's got page 30.

23 **There's a section here under the risk**
24 **factors on page 30, and let me just -- high level,**
25 **I take it, Qualcomm stands behind all the**

EXHIBIT 16

7/11/2025

Qualcomm Incorporated, et al. v. Arm Holdings PLC, et al. Jonathan Weiser
Highly Confidential - Attorneys' Eyes Only

Page 1

UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

QUALCOMM INCORPORATED, a)
Delaware corporation,)
QUALCOMM TECHNOLOGIES, INC.,)
a Delaware corporation,)
)
Plaintiffs,)
)
vs.) C.A. No.: 24-49-MN
)
ARM HOLDINGS PLC, f/k/a,)
ARM LTD. a U.K. corporation,)
)
Defendants.)
_____)

HIGHLY CONFIDENTIAL - ATTORNEYS' EYES ONLY

VIDEOTAPED DEPOSITION OF JONATHAN WEISER
San Diego, California
Friday, July 11, 2025

Reported by:
CATHY A. WOOD, RDR, RMR, CRR
CSR No. 2825

DIGITAL EVIDENCE GROUP
1730 M Street, NW, Suite 812
Washington, D.C. 20036
(202) 232-0646

7/11/2025

Qualcomm Incorporated, et al. v. Arm Holdings PLC, et al. Jonathan Weiser
Highly Confidential - Attorneys' Eyes Only

<p style="text-align: right;">Page 38</p> <p>1 BY MR. EMERICK: 2 Q. [REDACTED] 3 [REDACTED] 4 [REDACTED] 5 BY MR. EMERICK: 6 Q. We started briefly talking before about the 7 European Commission, the Federal Trade Commission, and 8 Korean Federal Trade Commission. Do you recall that? 9 MS. ZAPPALA: Outside the scope. 10 THE WITNESS: I recall your question, yes. 11 BY MR. EMERICK: 12 Q. [REDACTED] 13 [REDACTED] 14 [REDACTED] 15 [REDACTED] 16 [REDACTED] 17 [REDACTED] 18 [REDACTED] 19 BY MR. EMERICK: 20 Q. Are you aware of any communications between 21 Qualcomm and the European Commission regarding ARM? 22 MS. ZAPPALA: Same objection. 23 THE WITNESS: I'm not aware of any. 24 BY MR. EMERICK: 25 Q. [REDACTED]</p>	<p style="text-align: right;">Page 40</p> <p>1 BY MR. EMERICK: 2 Q. Do you know if Qualcomm's required to disclose 3 certain information in SEC filings? 4 MS. ZAPPALA: Outside the scope. 5 THE WITNESS: As a public company, it would 6 have certain obligations to disclose in SEC filings. 7 BY MR. EMERICK: 8 Q. What kind of information is Qualcomm required 9 to disclose in SEC filings? 10 MS. ZAPPALA: Outside the scope. You can 11 answer to the extent without divulging privileged 12 communications. 13 THE WITNESS: I -- so yeah, so I don't handle 14 Qualcomm, or when I was working at Qualcomm -- I'm 15 retired now -- I didn't handle Qualcomm's SEC filings. 16 So I didn't work on those matters. 17 Typically, I seem to recall matters would 18 include various different disclosures with regard to 19 risk to Qualcomm's business, financial information, 20 information with regard to key employees. But, again, 21 it wasn't -- it wasn't an area that I worked on. 22 BY MR. EMERICK: 23 Q. Are you aware that in October 2024, ARM sent a 24 letter to Qualcomm stating that Qualcomm was in breach 25 of the Qualcomm ALA?</p>
<p>[REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED] 5 MS. ZAPPALA: Same objection. 6 [REDACTED] 7 [REDACTED] 8 [REDACTED] 9 BY MR. EMERICK: 10 Q. Are you aware there was a story published 11 earlier this year about Qualcomm's actions against ARM 12 in the European Commission, the FTC, and the KFTC? 13 MS. ZAPPALA: Outside the scope. 14 THE WITNESS: I don't recall a story. 15 BY MR. EMERICK: 16 Q. Do you recall any media regarding Qualcomm's 17 actions against ARM in the European Commission and the 18 FTC or the KFTC? 19 MS. ZAPPALA: Outside the scope. 20 THE WITNESS: As I sit here today, I'm not 21 aware. 22 BY MR. EMERICK: 23 Q. Is Qualcomm a public company? 24 MS. ZAPPALA: Outside the scope. 25 THE WITNESS: Yes, it is.</p>	<p style="text-align: right;">Page 41</p> <p>1 MS. ZAPPALA: Outside the scope. 2 THE WITNESS: I believe that I reviewed that 3 letter. It was sent to me. And the letter is actually 4 a letter that announces or informs Qualcomm that it -- 5 that ARM was terminating Qualcomm's license providing a 6 [REDACTED]-day notice of termination. 7 BY MR. EMERICK: 8 Q. That's your understanding that as of -- that 9 the letter terminated the license? 10 A. It was -- 11 MS. ZAPPALA: Outside the scope. 12 THE WITNESS: Yeah, my reading of the letter is 13 that it was a -- I think the letter was October 2024, 14 that's the letter you're referring to? 15 BY MR. EMERICK: 16 Q. Yes. 17 A. It was a letter to put Qualcomm on notice that 18 ARM would terminate Qualcomm's license in 60 days. 19 Q. And would the termination be automatic after 60 20 days or it's -- would it need to be something that ARM 21 would -- a separate step that ARM would take -- have to 22 take after the [REDACTED] days? 23 MS. ZAPPALA: Outside the scope. 24 THE WITNESS: I don't seem to recall. 25 ///</p>

11 (Pages 38 to 41)

7/11/2025

Qualcomm Incorporated, et al. v. Arm Holdings PLC, et al. Jonathan Weiser
Highly Confidential - Attorneys' Eyes Only

<p>Page 42</p> <p>1 BY MR. EMERICK: 2 [REDACTED] 3 [REDACTED] 4 [REDACTED] 5 [REDACTED] 6 [REDACTED] 7 [REDACTED] 8 [REDACTED] 9 [REDACTED] 10 [REDACTED] 11 [REDACTED] 12 [REDACTED] 13 [REDACTED] 14 BY MR. EMERICK: 15 [REDACTED] 16 [REDACTED] 17 [REDACTED] 18 [REDACTED] 19 [REDACTED] 20 [REDACTED] 21 [REDACTED] 22 BY MR. EMERICK: 23 [REDACTED] 24 [REDACTED] 25 [REDACTED] ?</p>	<p>Page 44</p> <p>1 Bloomberg, would Qualcomm have disclosed it to its 2 customers? 3 MS. ZAPPALA: Objection to form, outside the 4 scope, calls for hypothetical. 5 And you can answer to the extent you can 6 without divulging privileged information. 7 THE WITNESS: Yeah, I -- I don't know as to 8 each and every customer, it certainly would be on a 9 circumstance-by-circumstance basis. 10 BY MR. EMERICK: 11 Q. Is there any reason Qualcomm would have to not 12 disclose that letter to its customers or the fact that 13 ARM had accused Qualcomm of breaching the Qualcomm ALA? 14 MS. ZAPPALA: Objection. Outside the scope, 15 objection to form, calls for hypothetical. 16 You can answer to the extent without divulging 17 privileged information. 18 THE WITNESS: So the lawsuit that ARM filed 19 against Qualcomm in 2021 was the allegation of breach 20 not as to Qualcomm ALA at that time, but as to the NUVIA 21 ALA. So many customers were very aware of the lawsuit, 22 and there was many discussions with them over the 23 three-year period before the 2024 letter. 24 BY MR. EMERICK: 25 Q. Qualcomm was having ongoing discussions with</p>
<p>Page 43</p> <p>1 [REDACTED] 2 [REDACTED] 3 [REDACTED] 4 [REDACTED] 5 [REDACTED] 6 [REDACTED] 7 [REDACTED] 8 BY MR. EMERICK: 9 Q. Did Qualcomm -- do you know if Qualcomm had any 10 obligation to notify its customers that ARM had sent a 11 letter to Qualcomm stating that Qualcomm was in breach 12 of the QC ALA? 13 MS. ZAPPALA: Objection. Outside the scope. 14 To the extent you know without divulging 15 privileged information. 16 THE WITNESS: As I sit here today, I can't 17 recall a [REDACTED] 18 [REDACTED] to disclose the ARM letter. 19 Many customers actually reached out to us to 20 discuss the ARM letter because, as I said, ARM, I 21 believe, leaked it to Bloomberg and Bloomberg published 22 an article on it. So many customers would have reached 23 out to us to discuss it. 24 BY MR. EMERICK: 25 Q. If ARM hadn't, as you say, leaked the letter to</p>	<p>Page 45</p> <p>1 customers regarding the litigation -- 2 MS. ZAPPALA: Same objection. 3 BY MR. EMERICK: 4 Q. -- since its inception? 5 MS. ZAPPALA: Same objection. Same 6 instruction. 7 THE WITNESS: I can't answer that question 8 without divulging confidential privileged information. 9 BY MR. EMERICK: 10 Q. Well, where's the privilege if it's with a 11 customer? 12 A. Are you asking about the content of those 13 discussions? 14 Q. Yeah, I'm asking about communications with 15 third-party customers. I'm not talking about internal 16 Qualcomm. 17 A. Oh, my apologies. 18 So yes, so Qualcomm, at least I, as the 19 representative of Qualcomm at the time, did have 20 discussions with certain customers over the period of 21 the three years. 22 Q. Who were the customers that you had 23 communications with regarding the litigation with ARM? 24 MS. ZAPPALA: Outside the scope. 25 THE WITNESS: I can tell you the customers that</p>

12 (Pages 42 to 45)

EXHIBIT 17

Liabilities ▾

450 Contingencies

20 Loss Contingencies

00 Status

① **General Note:**The Status Section identifies changes to this Subtopic resulting from Accounting Standards Updates. The Section provides references to the affected Codification content and links to the related Accounting Standards Updates. Nonsubstantive changes for items such as editorial, link and similar corrections are included separately in Maintenance Updates.

General

450-20-00-1	The following table identifies the changes made to this Subtopic.			
	Paragraph	Action	Accounting Standards Update	Date
	Commencement Date of the Lease (Commencement Date)	Added	Accounting Standards Update No. 2016-02	02/25/2016
	Contract	Added	Accounting Standards Update No. 2016-02	02/25/2016
	Lease	Added	Accounting Standards Update No. 2016-02	02/25/2016
	Lessee	Added	Accounting Standards Update No. 2016-02	02/25/2016
	Lessor	Added	Accounting Standards Update No. 2016-02	02/25/2016
	Reinsurance	Added	Accounting Standards Update No. 2016-19	12/14/2016
	Underlying Asset	Added	Accounting Standards Update No. 2016-02	02/25/2016
	Variable Lease Payments	Added	Accounting Standards Update No. 2016-02	02/25/2016
	450-20-05-3	Amended	Accounting Standards Update No. 2016-19	12/14/2016
	450-20-15-2	Amended	Accounting Standards Update No. 2016-13	06/16/2016
	450-20-50-1	Amended	Accounting Standards Update No. 2024-03	11/04/2024
	450-20-50-2A	Amended	Accounting Standards Update No. 2016-13	06/16/2016
	450-20-50-2A	Added	Accounting Standards Update No. 2010-20	07/21/2010
	450-20-55-4	Amended	Maintenance Update 2018-02 ↗	02/02/2018
	450-20-60-2	Amended	Accounting Standards Update No. 2016-13	06/16/2016
	450-20-60-3	Amended	Accounting Standards Update No. 2016-13	06/16/2016
	450-20-60-14	Amended	Accounting Standards Update No. 2016-19	12/14/2016

- d. Accounting and reporting by insurance entities, which is discussed in Topic 944.
- e. Measurement of credit losses for instruments within the scope of Topic 326 on measurement of credit losses.

20 Glossary

- ① **General Note:** The Master Glossary contains all terms identified as glossary terms throughout the Codification. Clicking on any term in the Master Glossary will display where the term is used. The Master Glossary may contain identical terms with different definitions, some of which may not be appropriate for a particular Subtopic. For any particular Subtopic, users should only use the glossary terms included in the particular Subtopic Glossary Section (Section 20).

Commencement Date of the Lease (Commencement Date)

The date on which a lessor makes an underlying asset available for use by a lessee. See paragraphs 842-10-55-19 through 55-21 for implementation guidance on the commencement date.

Contingency

An existing condition, situation, or set of circumstances involving uncertainty as to possible gain (gain contingency) or loss (loss contingency) to an entity that will ultimately be resolved when one or more future events occur or fail to occur.

Contract

An agreement between two or more parties that creates enforceable rights and obligations.

Gain Contingency

An existing condition, situation, or set of circumstances involving uncertainty as to possible gain to an entity that will ultimately be resolved when one or more future events occur or fail to occur.

Lease

A contract, or part of a contract, that conveys the right to control the use of identified property, plant, or equipment (an identified asset) for a period of time in exchange for consideration.

Lessee

An entity that enters into a contract to obtain the right to use an underlying asset for a period of time in exchange for consideration.

Lessor

An entity that enters into a contract to provide the right to use an underlying asset for a period of time in exchange for consideration.

Loss Contingency

An existing condition, situation, or set of circumstances involving uncertainty as to possible loss to an entity that will ultimately be resolved when one or more future events occur or fail to occur. The term loss is used for convenience to include many charges against income that are commonly referred to as expenses and others that are commonly referred to as losses.

Probable

The future event or events are likely to occur.

Reasonably Possible

The chance of the future event or events occurring is more than remote but less than likely.

Reinsurance

A transaction in which a reinsurer (assuming entity), for a consideration (premium), assumes all or part of a risk undertaken originally by another insurer (ceding entity). For indemnity reinsurance, the legal rights of the insured are not affected by the reinsurance transaction and the insurance entity issuing the insurance contract remains liable to the insured for payment of policy benefits. Assumption or novation reinsurance contracts that are legal replacements of one insurer by another extinguish the ceding entity's liability to the policyholder.

Remote

The chance of the future event or events occurring is slight.

Underlying Asset

An asset that is the subject of a lease for which a right to use that asset has been conveyed to a lessee. The underlying asset could be a physically distinct portion of a single asset.

Variable Lease Payments

Payments made by a lessee to a lessor for the right to use an underlying asset that vary because of changes in facts or circumstances occurring after the commencement date, other than the passage of time.

25 Recognition

- ① **General Note:** The Recognition Section provides guidance on the required criteria, timing, and location (within the financial statements) for recording a particular item in the financial statements. Disclosure is not recognition.

General

> General Rule

450-20-25-1 When a loss contingency exists, the likelihood that the future event or events will confirm the loss or impairment of an asset or the incurrence of a liability can range from probable to remote. As indicated in the definition of contingency, the term *loss* is used for convenience to include many charges against income that are commonly referred to as expenses and others that are commonly referred to as losses. The Contingencies Topic uses the terms *probable*, reasonably possible, and *remote* to identify three areas within that range.

450-20-25-2 An estimated loss from a loss contingency shall be accrued by a charge to income if both of the following conditions are met:

- a. Information available before the financial statements are issued or are available to be issued (as discussed in Section 855-10-25) indicates that it is probable that an asset had been impaired or a liability had been incurred at the date of the financial statements. Date of the financial statements means the end of the most recent accounting period for which financial statements are being presented. It is implicit in this condition that it must be probable that one or more future events will occur confirming the fact of the loss.
- b. The amount of loss can be reasonably estimated.

The purpose of those conditions is to require accrual of losses when they are reasonably estimable and relate to the current or a prior period. Paragraphs 450-20-55.1 through 55-17 and Examples 1-2 (see paragraphs 450-20-55-18 through 55-35) illustrate the application of the conditions. As discussed in paragraph 450-20-50-5, disclosure is preferable to accrual when a reasonable estimate of loss cannot be made. Further, even losses that are reasonably estimable shall not be accrued if it is not probable that an asset has been impaired or a liability has been incurred at the date of an entity's financial statements because those losses relate to a future period rather than the current or a prior period. Attribution of a loss to events or activities of the current or prior periods is an element of asset impairment or liability incurrence.

> Assessing Probability of Incurrence of a Loss

450-20-25-3 The conditions in the preceding paragraph are not intended to be so rigid that they require virtual certainty before a loss is accrued. Instead, the condition in (a) in the preceding paragraph is intended to proscribe accrual of losses that relate to future periods.

> Assessing Whether a Loss Is Reasonably Estimable

450-20-25-4 The condition in paragraph 450-20-25-2(b) is intended to prevent accrual in the financial statements of amounts so uncertain as to impair the integrity of those statements.

450-20-25-5 That requirement shall not delay accrual of a loss until only a single amount can be reasonably estimated. To the contrary, when the condition in paragraph 450-20-25-2(a) is met and information available indicates that the estimated amount of loss is within a range of amounts, it follows that some amount of loss has occurred and can be reasonably estimated. Thus, when the condition in paragraph 450-20-25-2(a) is met with respect to a particular loss contingency and the reasonable estimate of the loss is a range, the condition in paragraph 450-20-25-2(b) is met and an amount shall be accrued for the loss.

> Events After the Date of the Financial Statements

450-20-25-6 After the date of an entity's financial statements but before those financial statements are issued or are available to be issued (as discussed in Section 855-10-25), information may become available indicating that an asset was impaired or a liability was incurred after the date of the financial statements or that there is at least a reasonable possibility that an asset was impaired or a liability was incurred after that date. The information may relate to a loss contingency that existed at the date of the financial statements, for example, an asset that was not insured at the date of the financial statements. On the other hand, the information may relate to a loss contingency that did not exist at the date of the financial statements, for example, threat of expropriation of assets after the date of the financial statements or the filing for bankruptcy by an entity whose debt was guaranteed after the date of the financial statements. In none of the cases cited in this paragraph was an asset impaired or a liability incurred at the date of the financial statements, and the condition for accrual in paragraph 450-20-25-2(a) is, therefore, not met.

450-20-25-7 If a loss cannot be accrued in the period when it is probable that an asset had been impaired or a liability had been incurred because the amount of loss cannot be reasonably estimated, the loss shall be charged to the income of the period in which the loss can be reasonably estimated and shall not be charged retroactively to an earlier period. All estimated losses for loss contingencies shall be charged to income rather than charging some to income and others to retained earnings as prior period adjustments.

> Business Risks

450-20-25-8 General or unspecified business risks do not meet the conditions for accrual in paragraph 450-20-25-2, and no accrual for loss shall be made.

30 Initial Measurement

- ① **General Note:**The Initial Measurement Section provides guidance on the criteria and amounts used to measure a particular item at the date of initial recognition.

General

- 450-20-30-1** If some amount within a range of loss appears at the time to be a better estimate than any other amount within the range, that amount shall be accrued. When no amount within the range is a better estimate than any other amount, however, the minimum amount in the range shall be accrued. Even though the minimum amount in the range is not necessarily the amount of loss that will be ultimately determined, it is not likely that the ultimate loss will be less than the minimum amount. Examples 1-2 (see paragraphs 450-20-55-18 through 55-35) illustrate the application of these initial measurement standards.

50 Disclosure

- ① **General Note:**The Disclosure Section provides guidance regarding the disclosure in the notes to financial statements. In some cases, disclosure may relate to disclosure on the face of the financial statements.

General

> Accruals for Loss Contingencies

- 450-20-50-1** Disclosure of the nature of an accrual made pursuant to the provisions of paragraph 450-20-25-2, and in some circumstances the amount accrued, may be necessary for the financial statements not to be misleading. Terminology used shall be descriptive of the nature of the accrual, such as estimated liability or liability of an estimated amount. The term *reserve* shall not be used for an accrual made pursuant to paragraph 450-20-25-2; that term is limited to an amount of unidentified or unsegregated assets held or retained for a specific purpose. Examples 1 (see paragraph 450-20-55-18) and 2, Cases A, B, and D (see paragraphs 450-20-55-23, 450-20-55-27, and 450-20-55-32) illustrate the application of these disclosure standards.